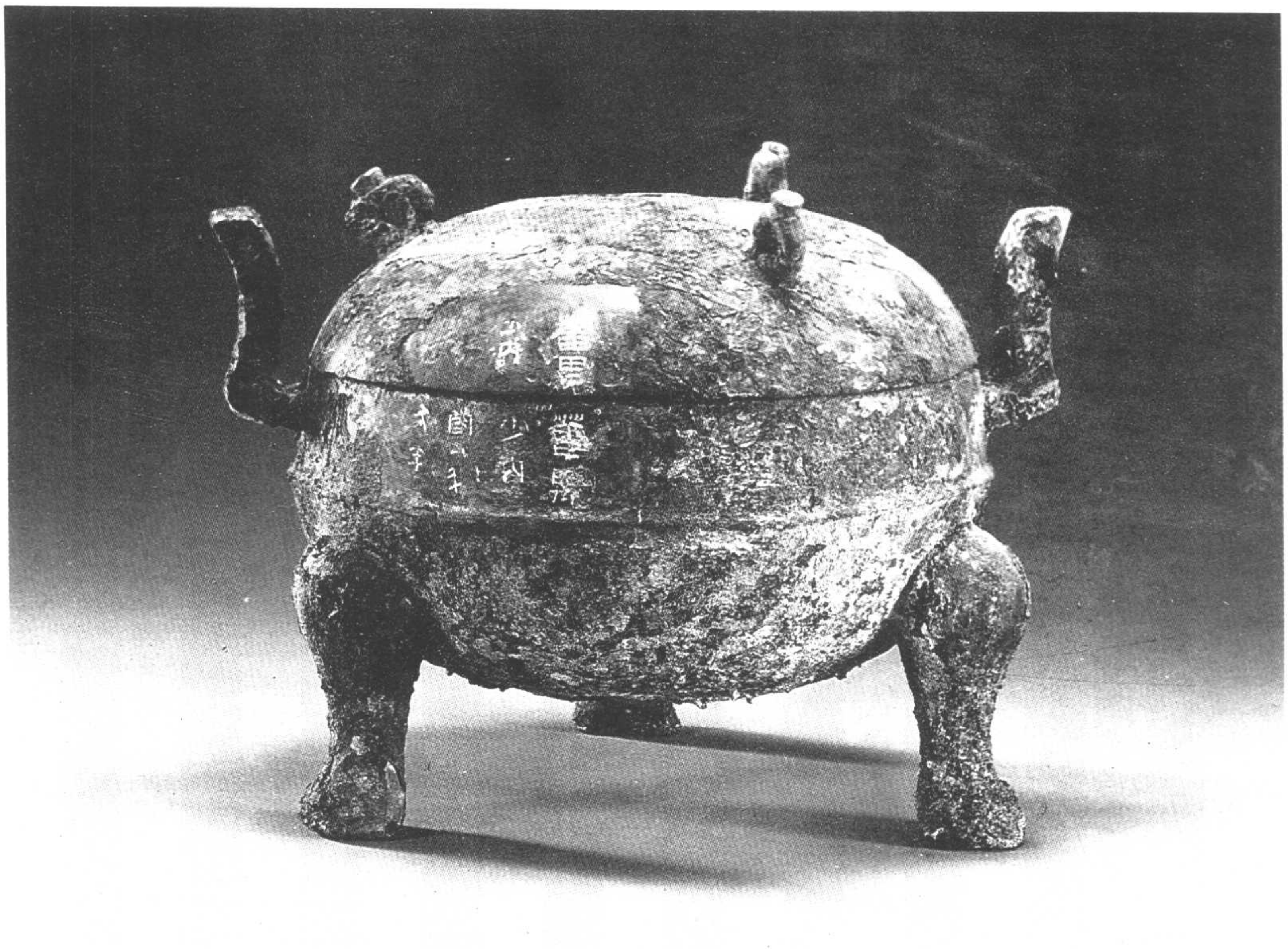
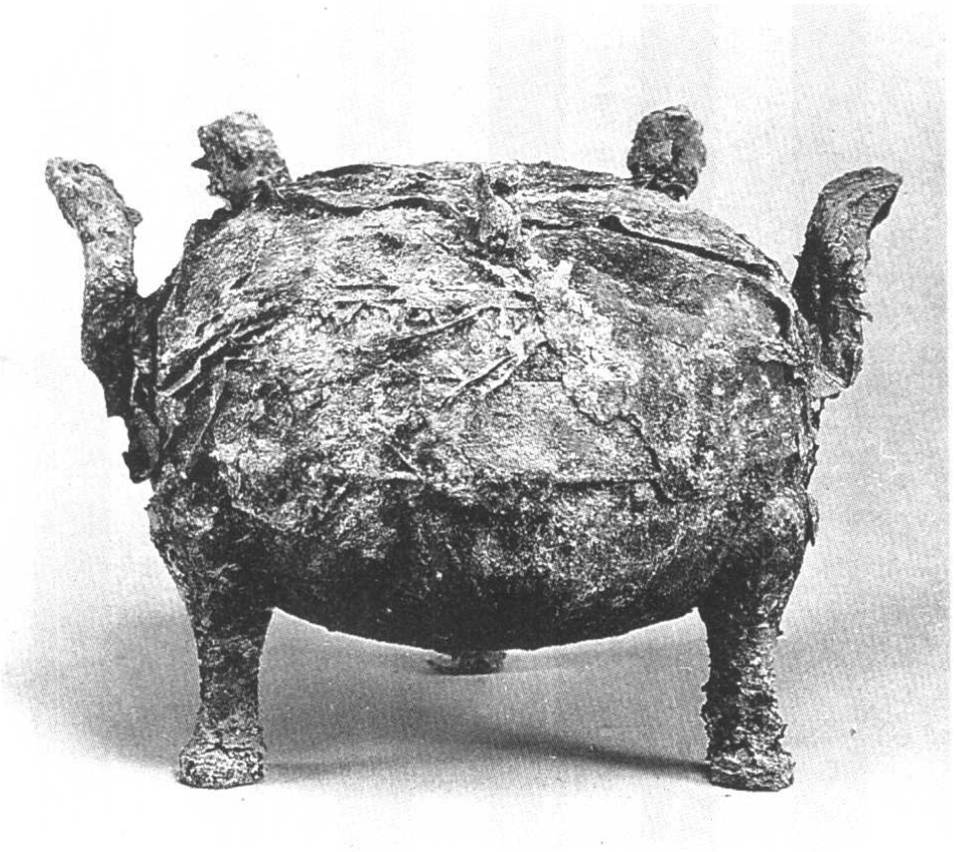


1. 甲Ⅱ(G54)

2. 甲Ⅱ(G53)

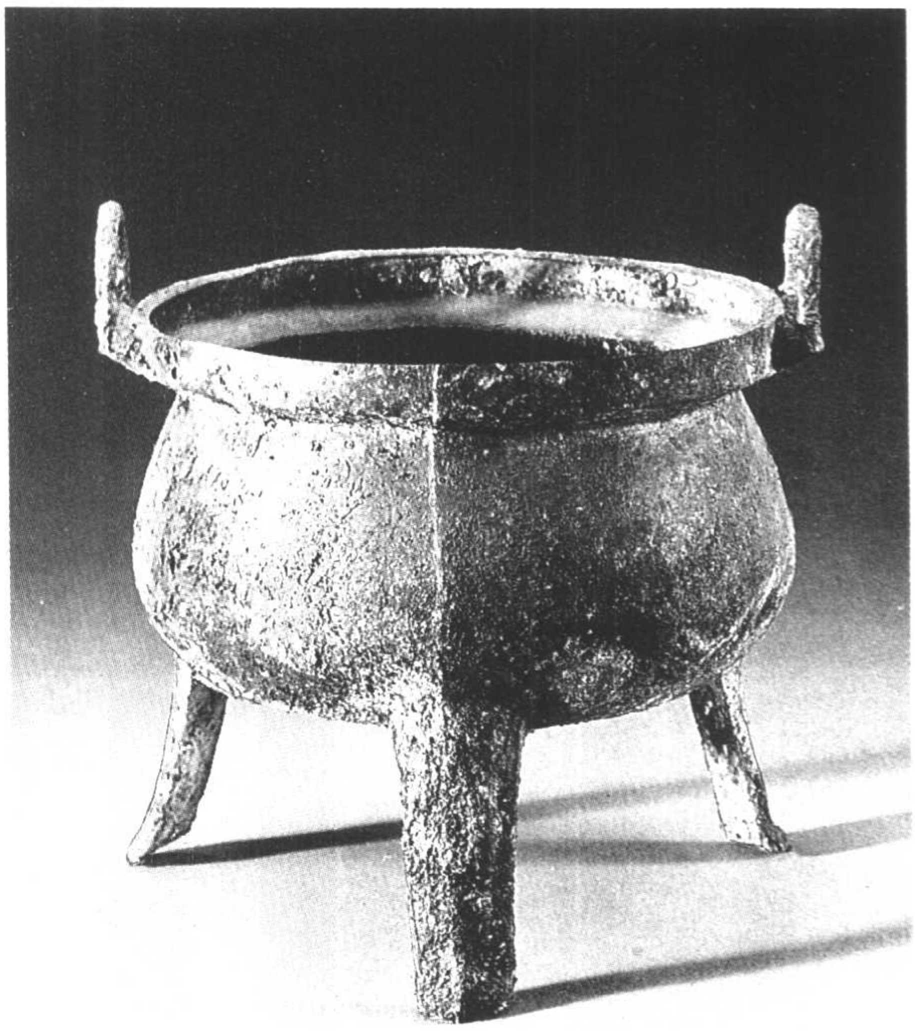
后藏室铜鼎



1. 甲Ⅱ(G66)

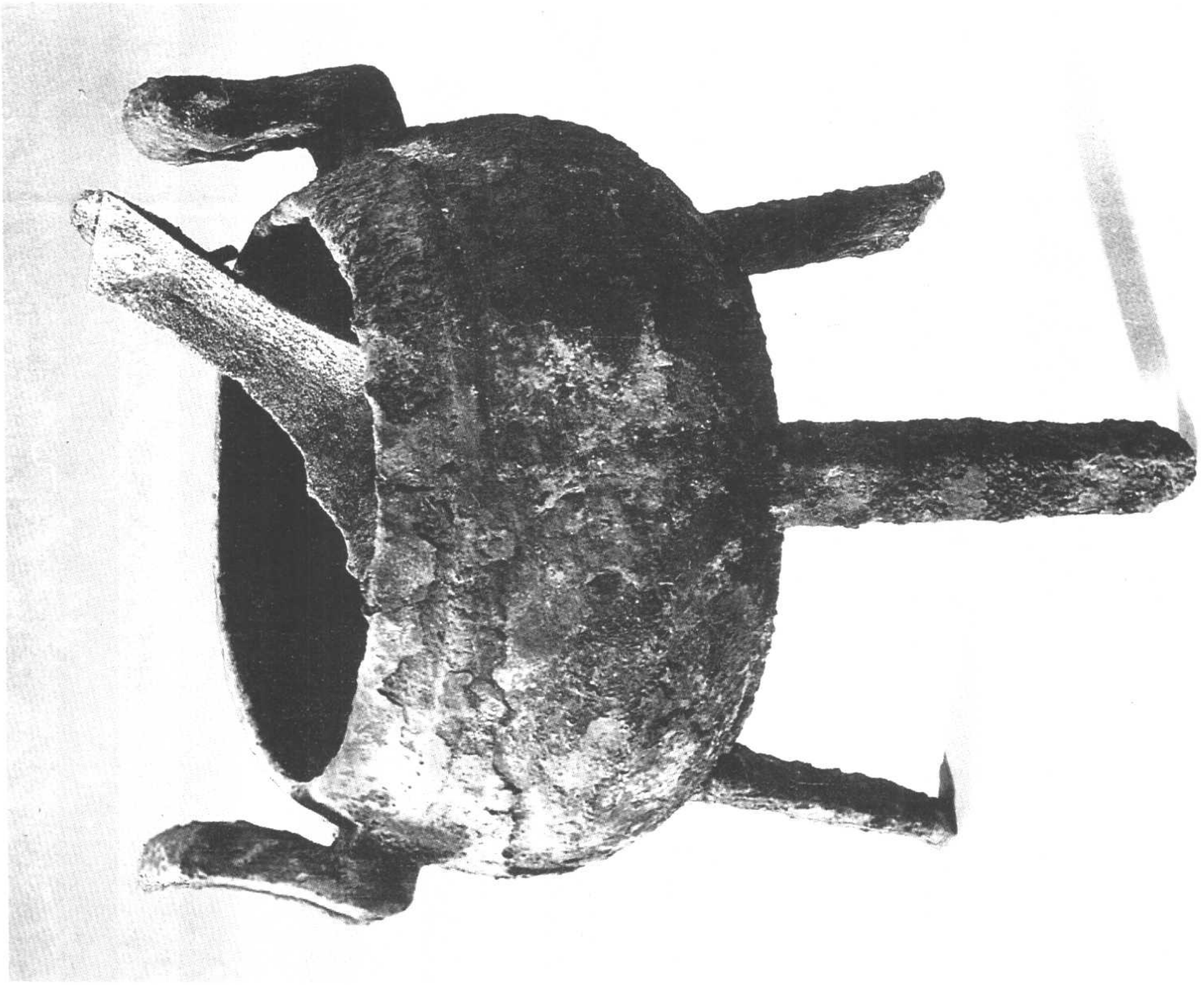
2. 乙Ⅰ(G6)

3. 乙Ⅱ①(G9)

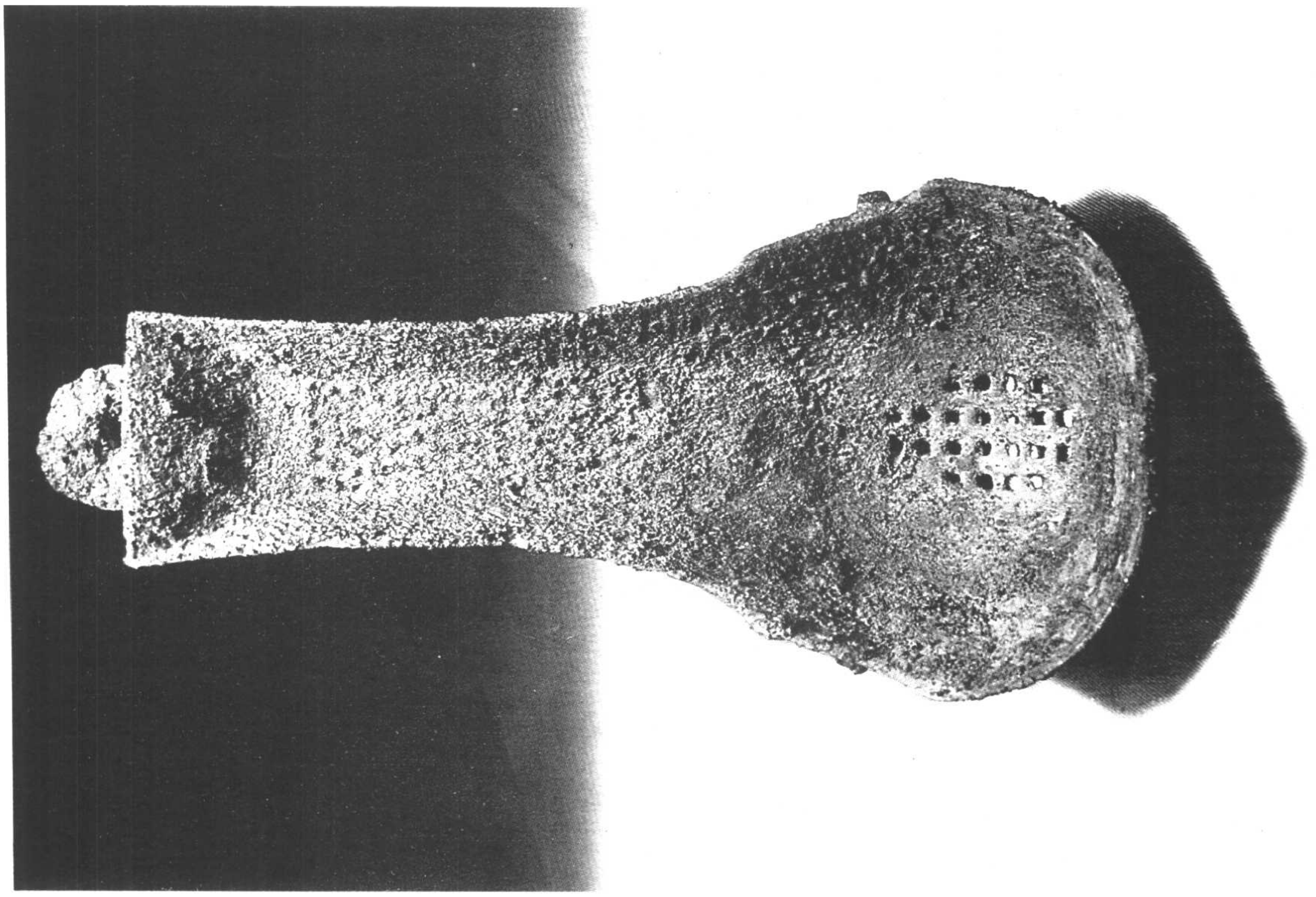


4. 乙Ⅱ②(G58)

后藏室铜鼎



1.鼎乙Ⅰ(G32-1)



2.姜礤(G32-2)

后藏室铜器

1. 乙Ⅲ(G3)

2. 乙Ⅲ(G10)

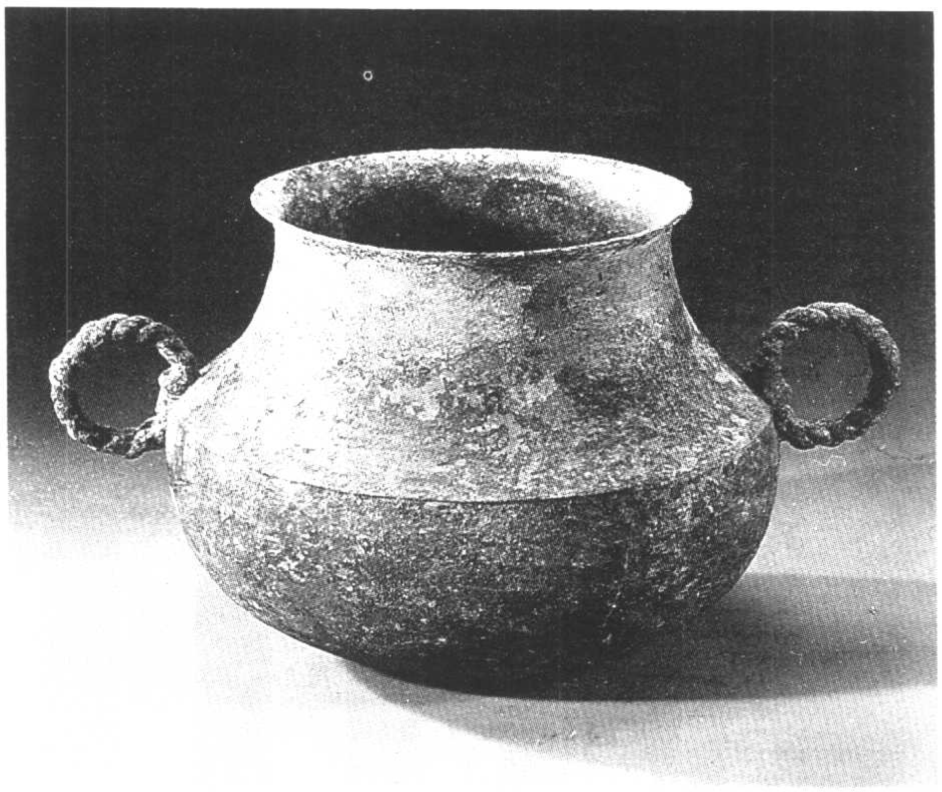
后藏室铜鼎

1. 鼎乙Ⅲ(G4)

2. 釜甑、鍪与铁三足架

后藏室铜器

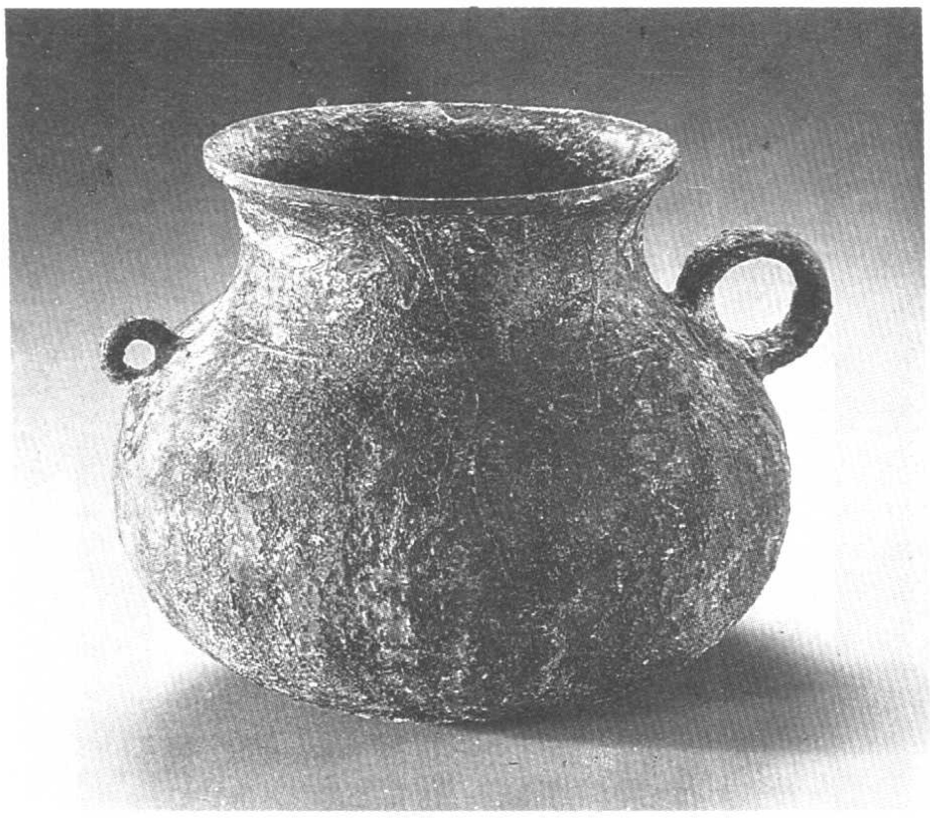
1. 鍪Ⅰ(G72～G76)



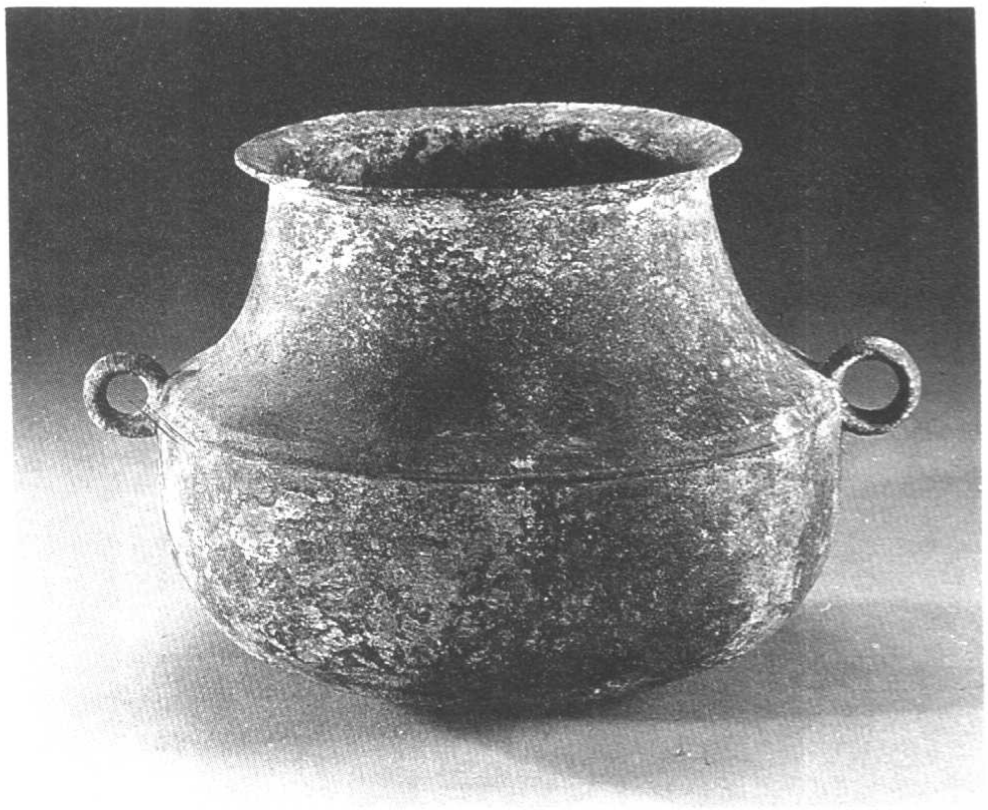
2. 鍪Ⅰ(G83)

3. 丝织物封口遗痕(G57)

后藏室铜器

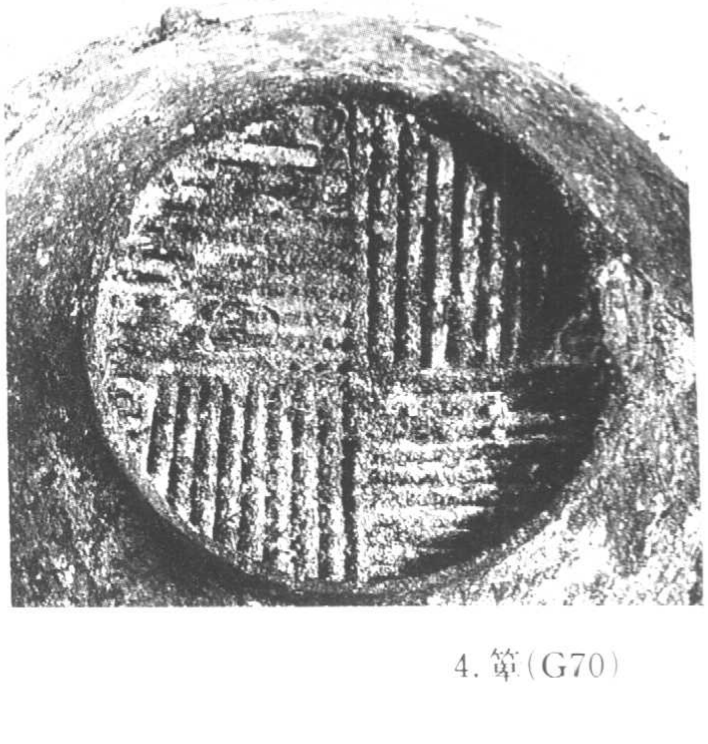


1. 鋈Ⅱ(G67)



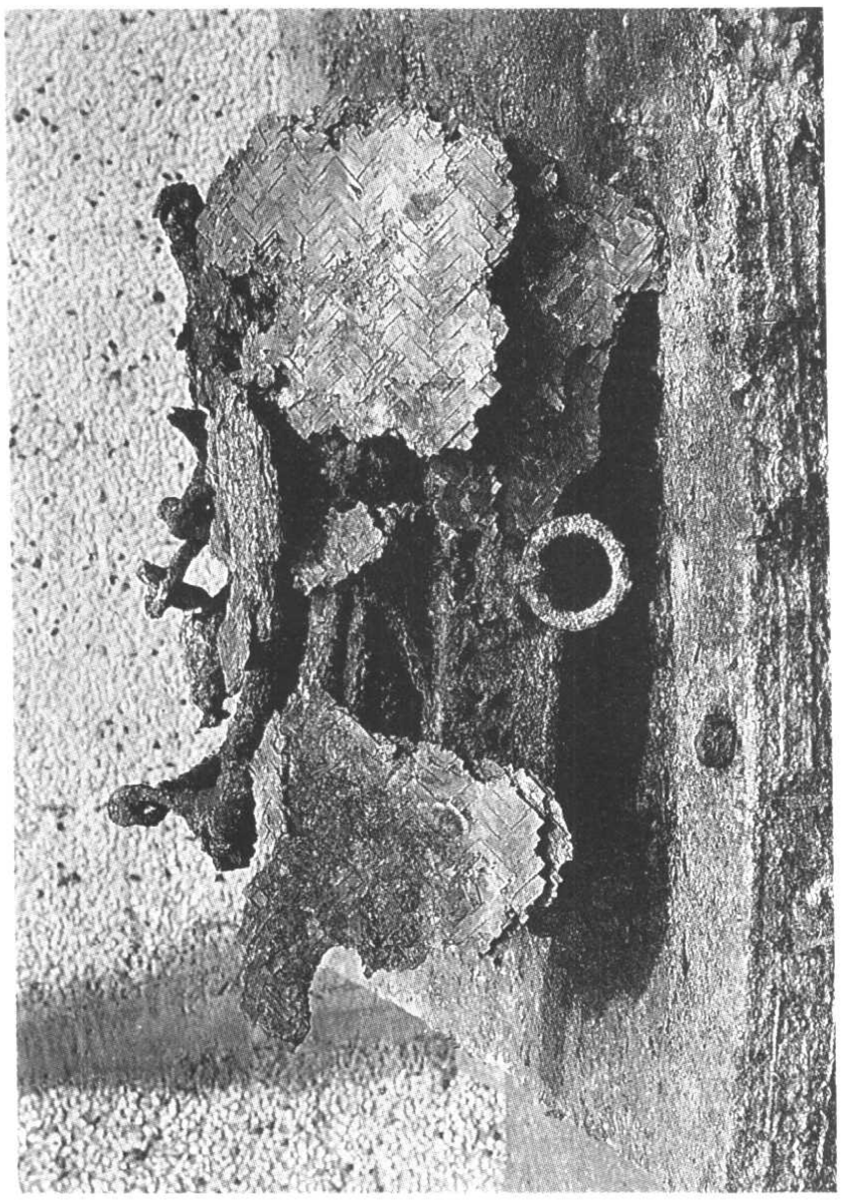
2. 鋈Ⅲ(G63)

3. 釜甑(G70)

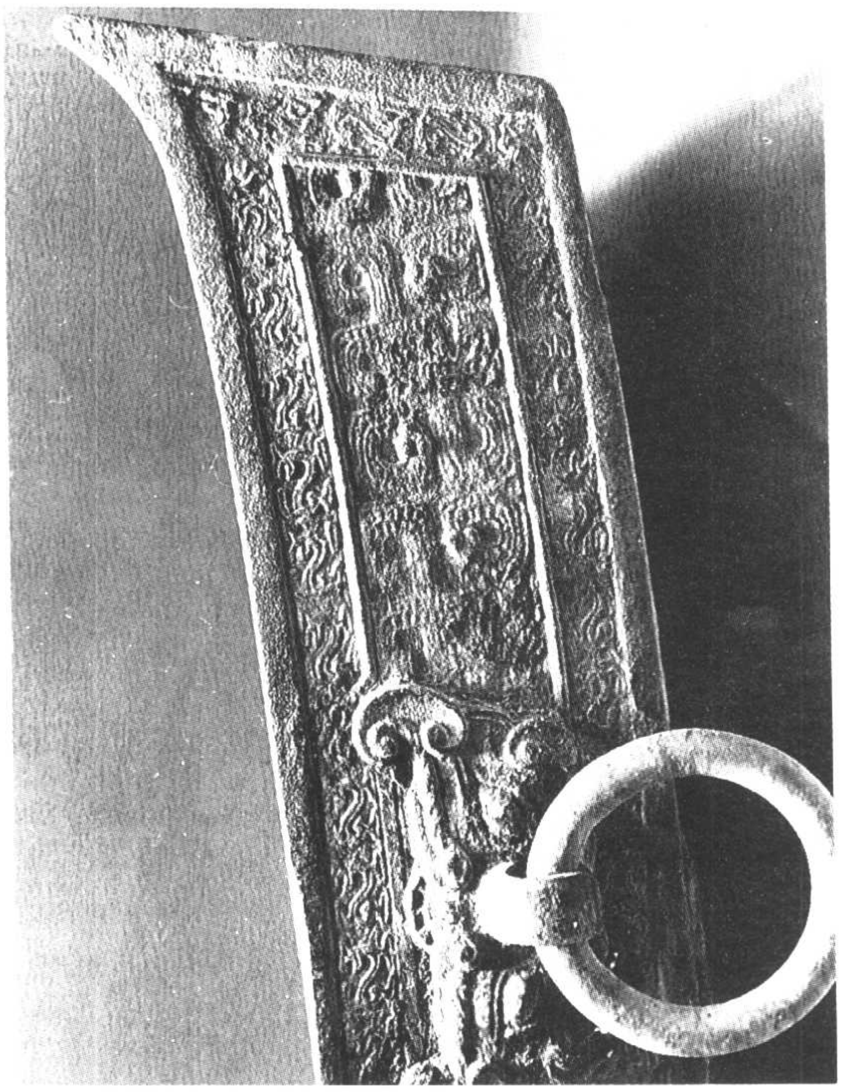


4. 箄(G70)

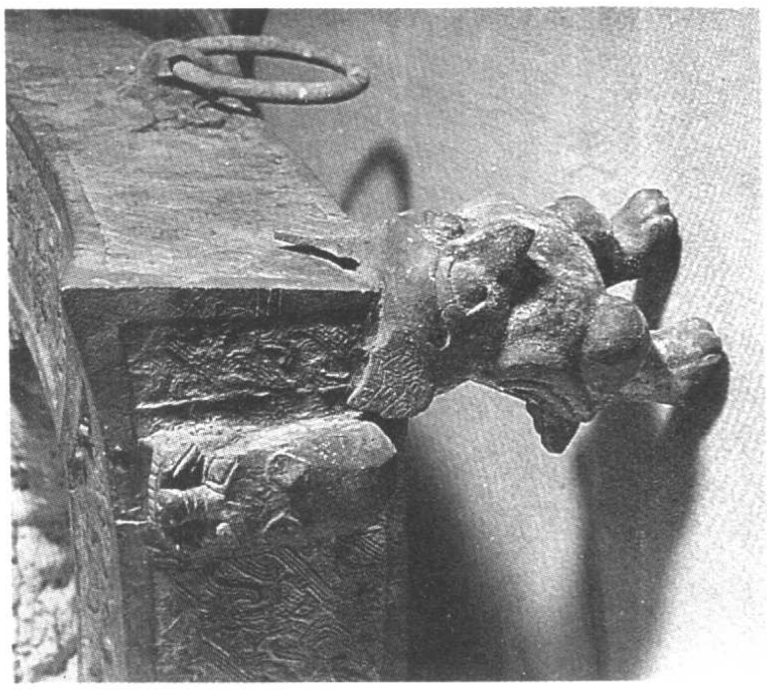
后藏室铜器



1. 炉上的竹笥与铁链



2. 局部纹样(G41)



3. 鸭形足(G40)

4. 局部纹样(G40)

后藏室铜器

1. 出土时两器套叠(G47、G48)

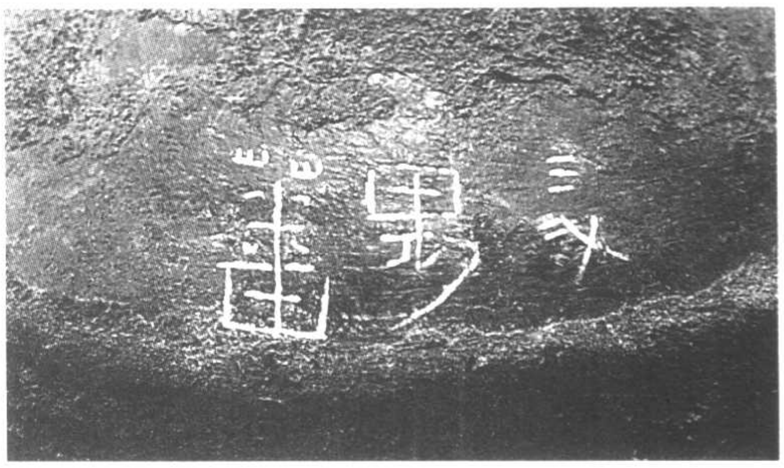
2. Ⅰ(G37)

3. Ⅱ(G47)

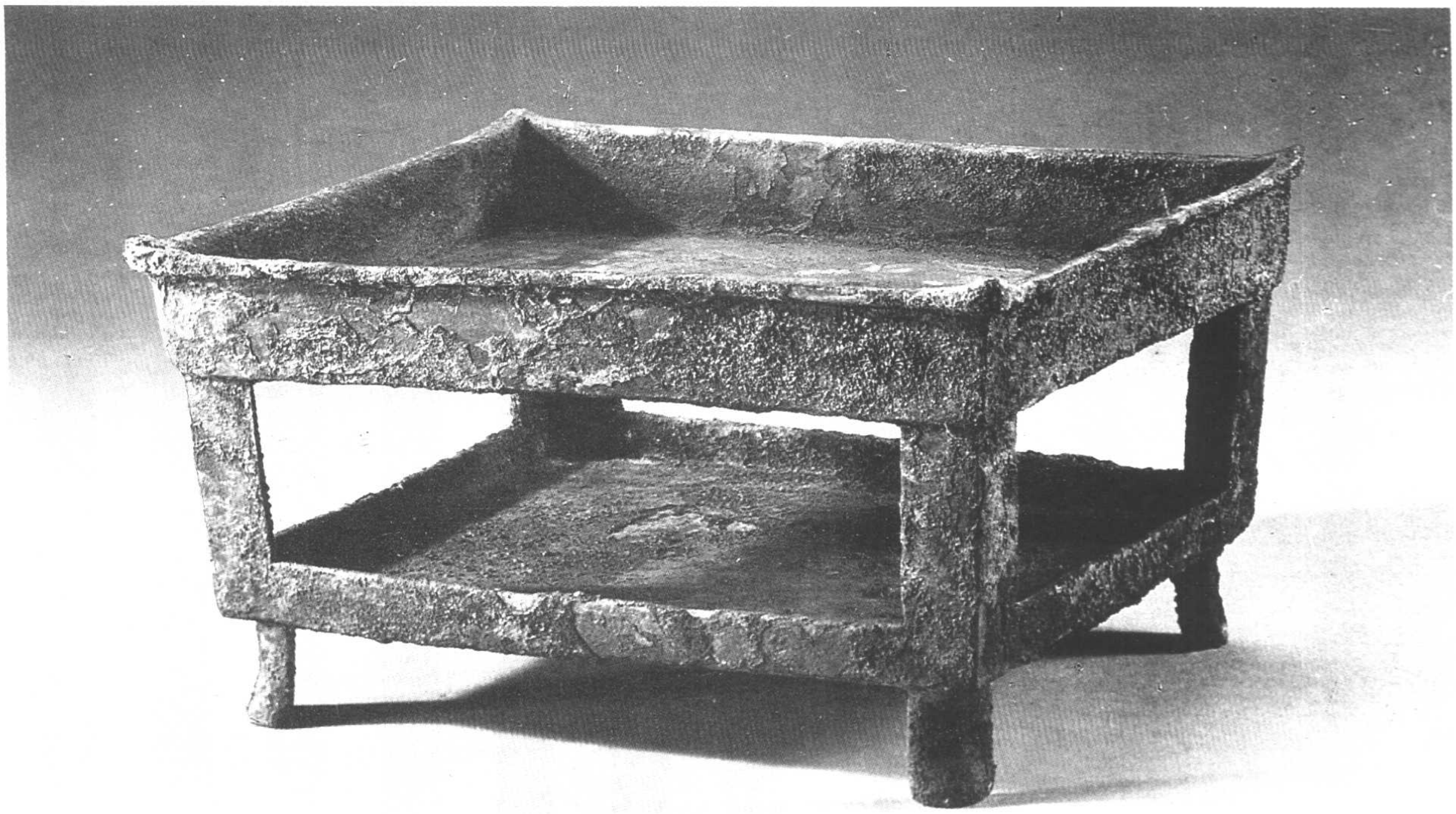
后藏室铜提筒

1. 盉(G34)

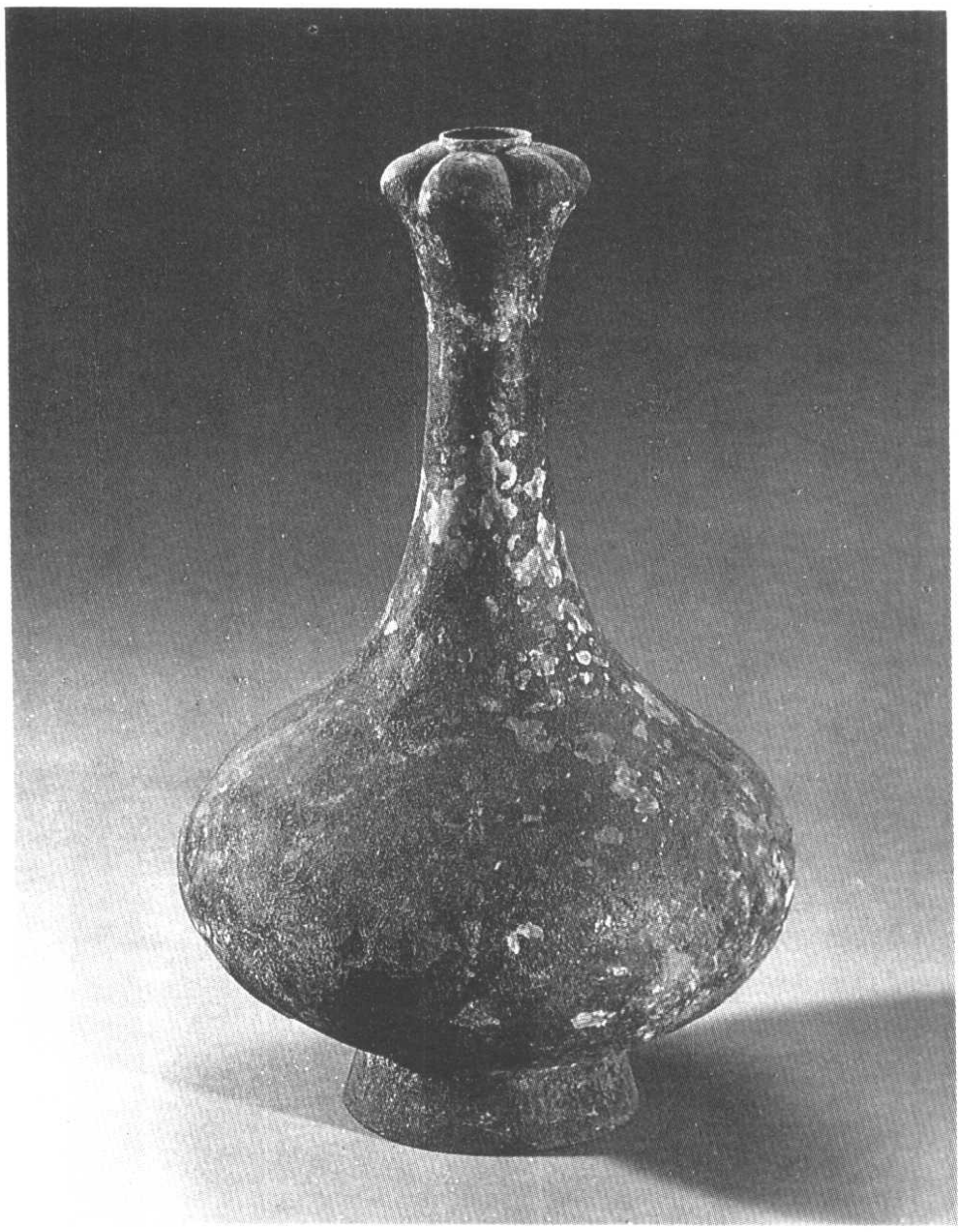
2. 异型壶(G46)



后藏室铜器



1. 煎炉(G11)



2. 蒜头壶(G56)

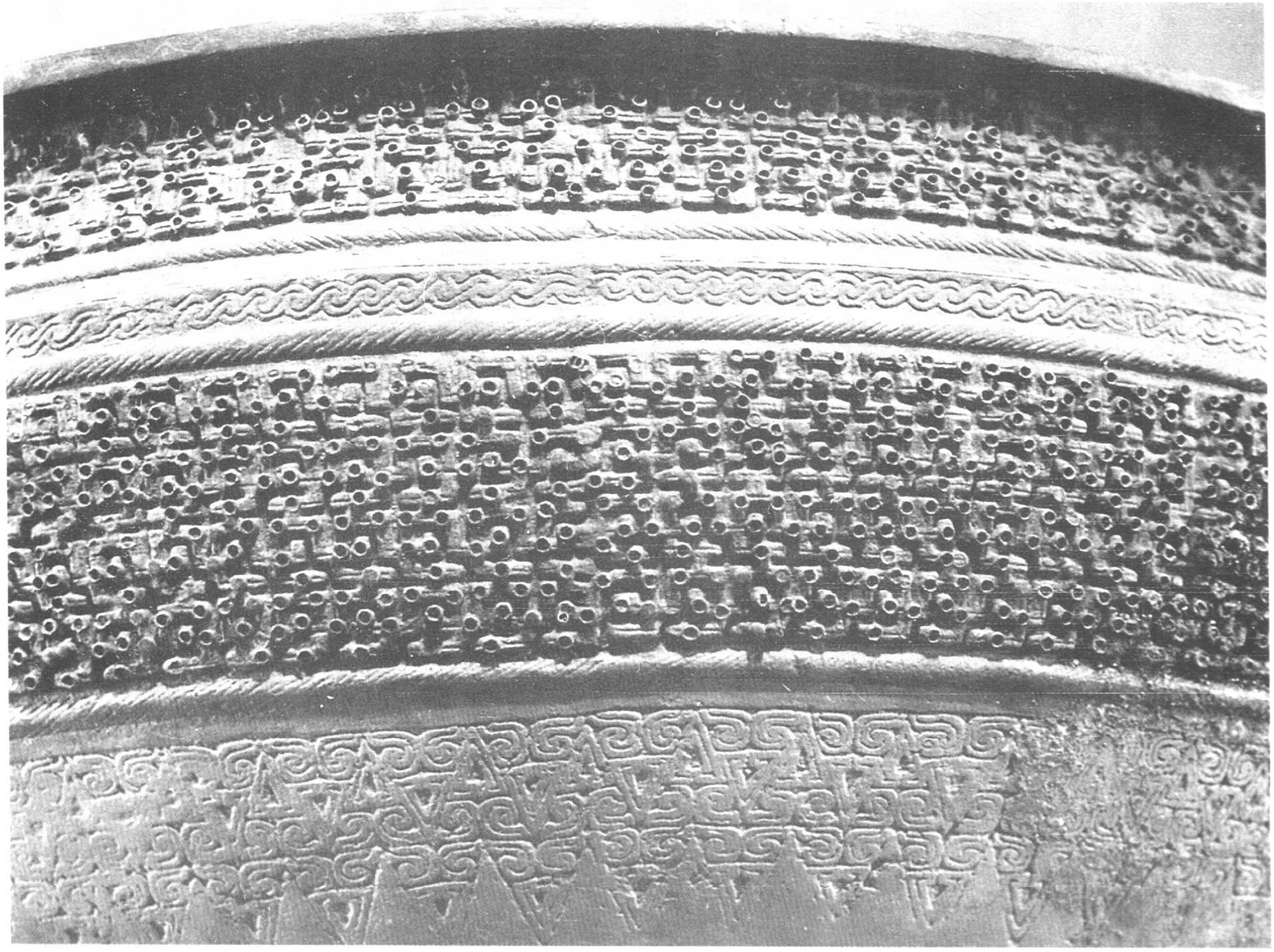
后藏室铜器

1. Ⅰ(G38)

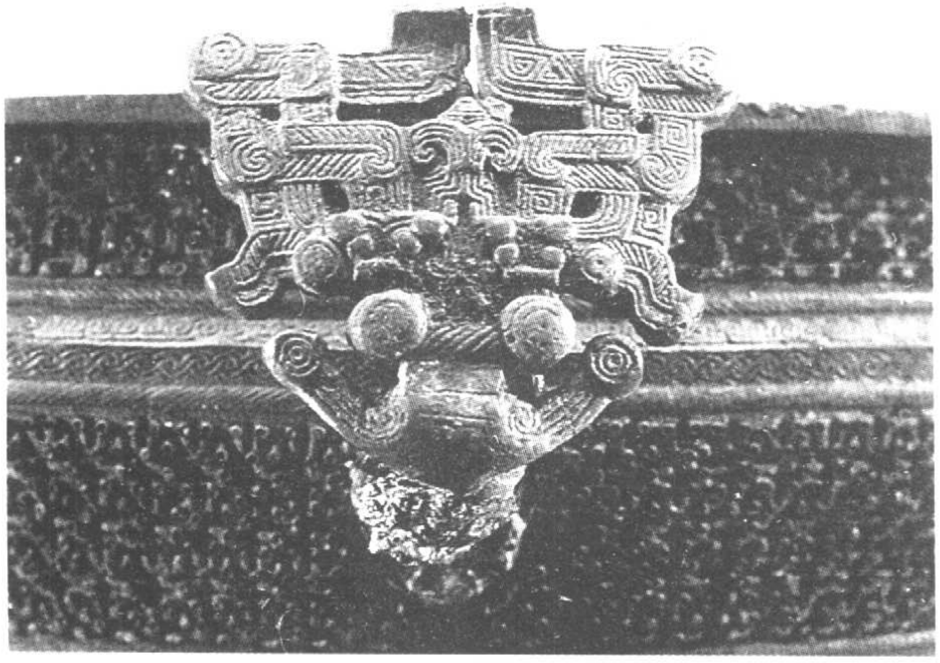
2. Ⅰ(G39)

3. 局部花纹(G38)

后藏室铜鉴



1. 局部纹饰



2. 耳上的兽面珰

3. 鉴底铸范痕

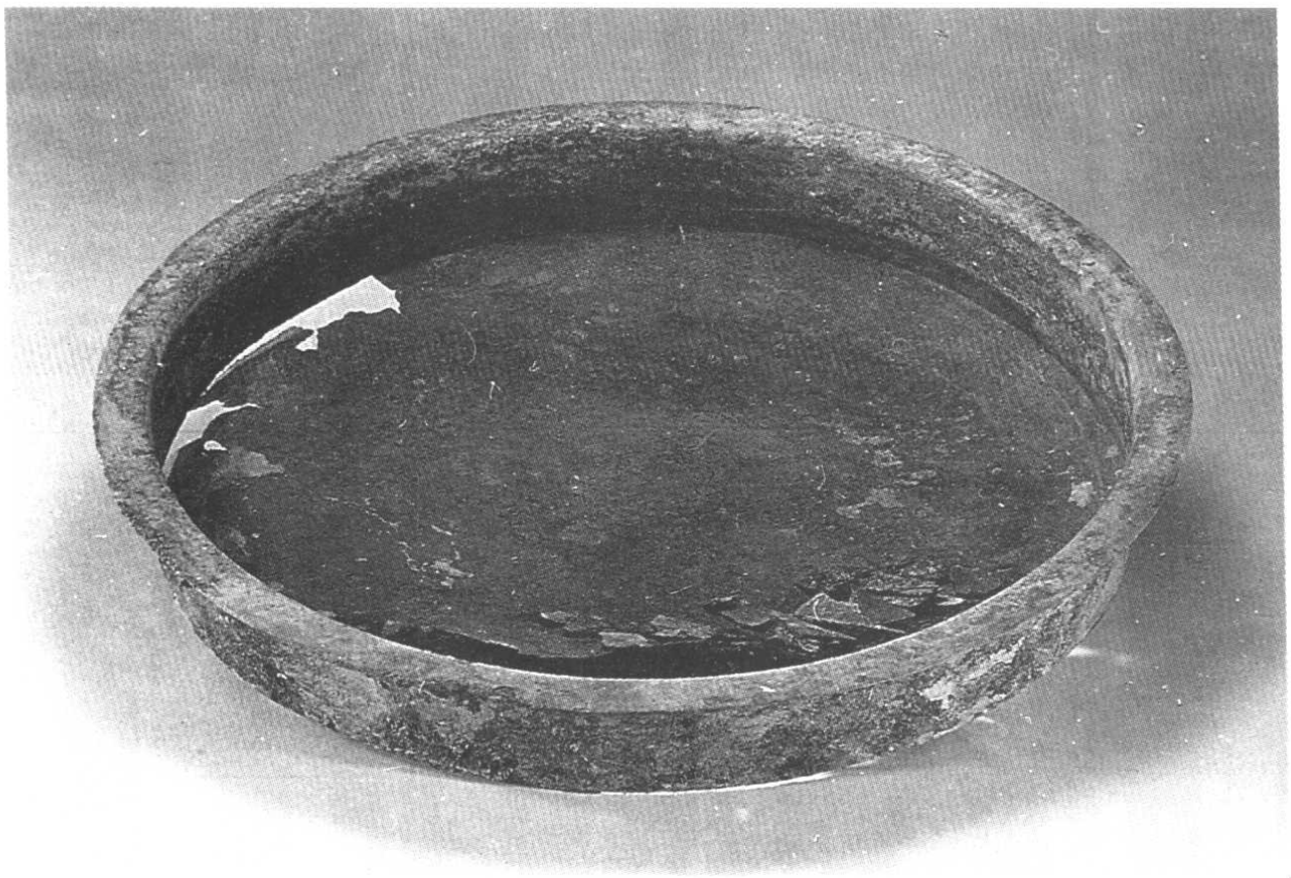
后藏室铜鉴Ⅱ(G68)

1. 出土时两铜相叠(G80、G81)

2. 铜底铆钉修补痕(G80、G81)

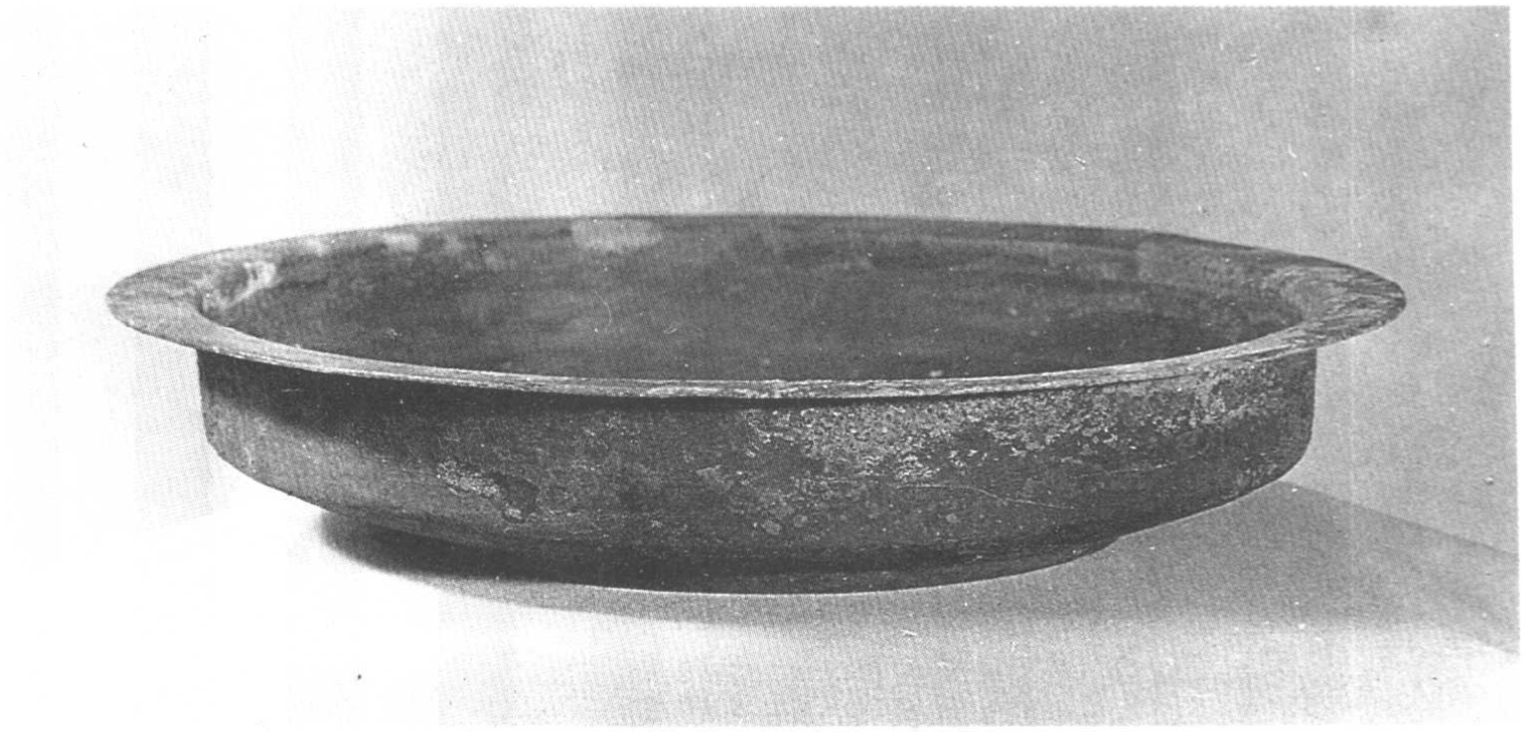
3. 匜 Ⅱ(G84)

后藏室铜器



1. Ⅱ(G77)

2. Ⅲ(G78)



3. Ⅳ(G79)

后藏室铜盆

图版一九二(CⅩCⅡ)

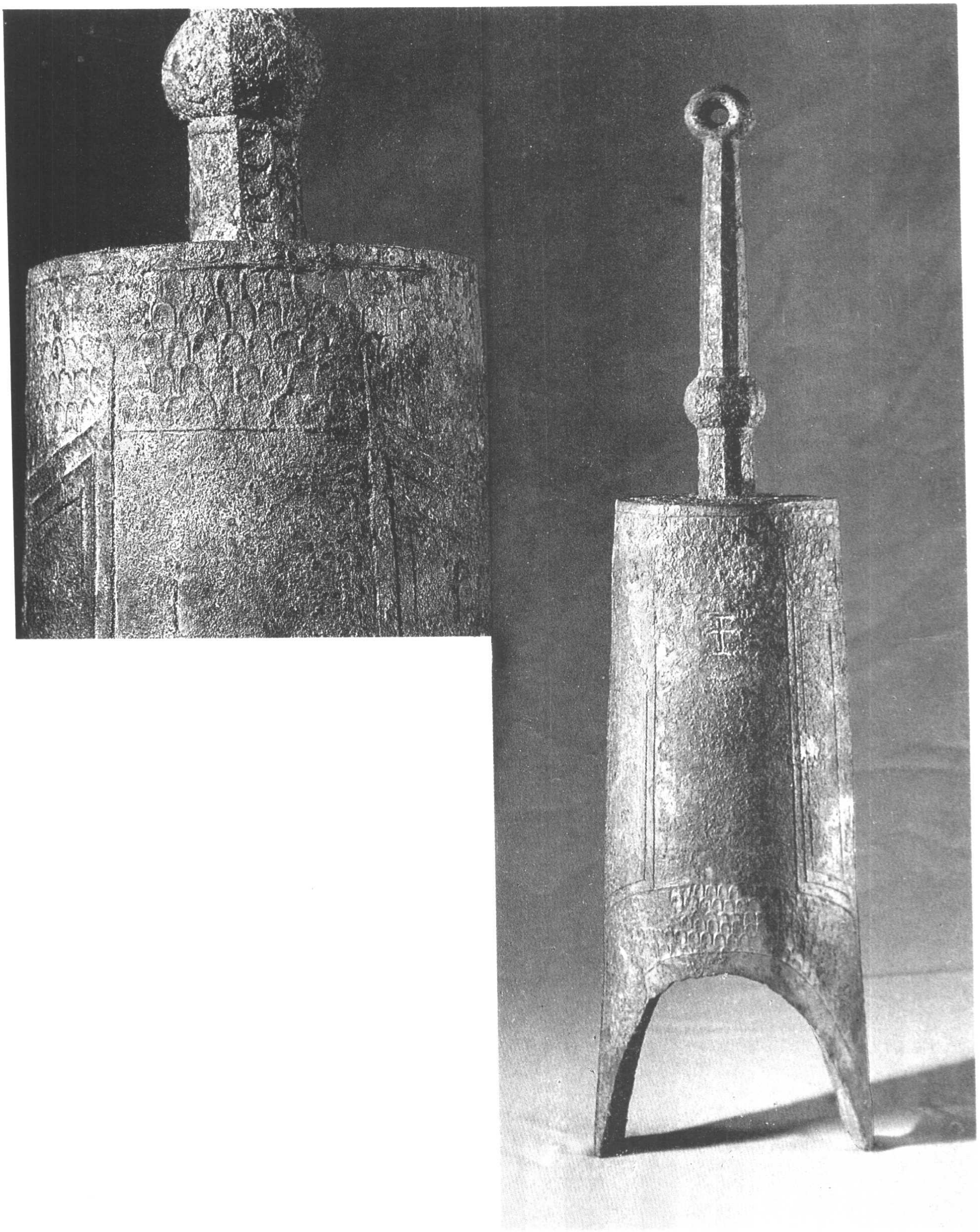
1.(G62)

2.刻铭(G62－1)

3.刻铭(G62－2)

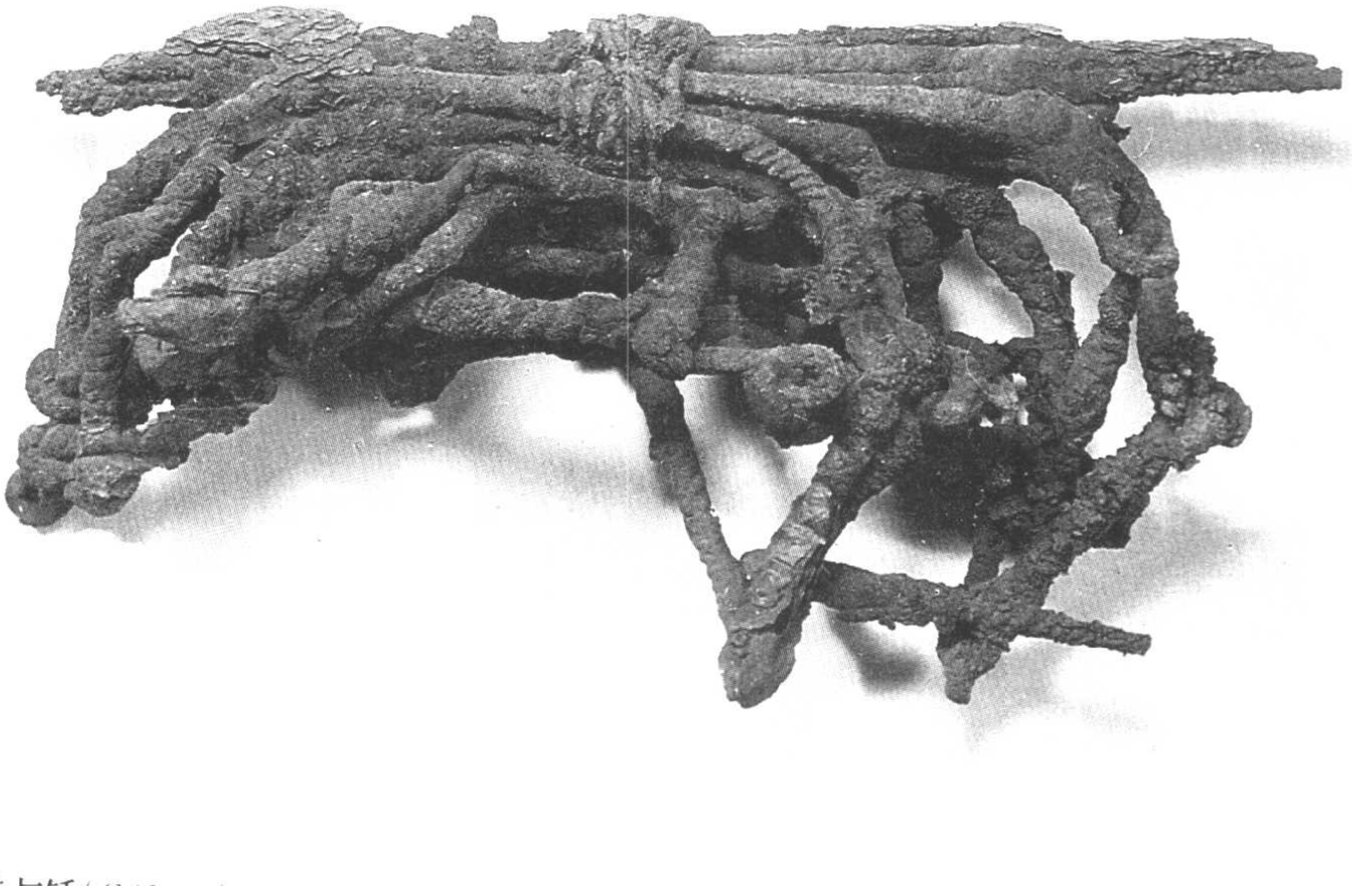
后藏室铜灯

图版一九三(CXCⅢ)



后藏室铜铎(G86)

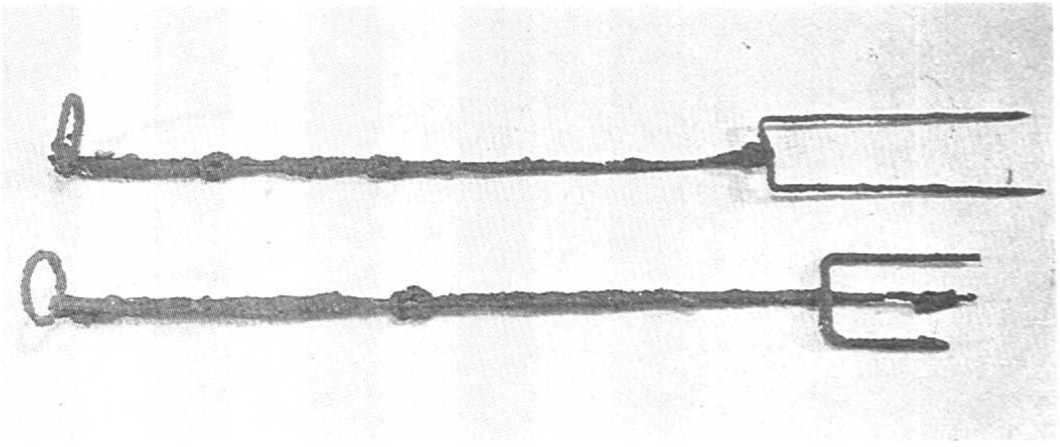
1. 鼎(G2)



2. 链与钎(G40—2)

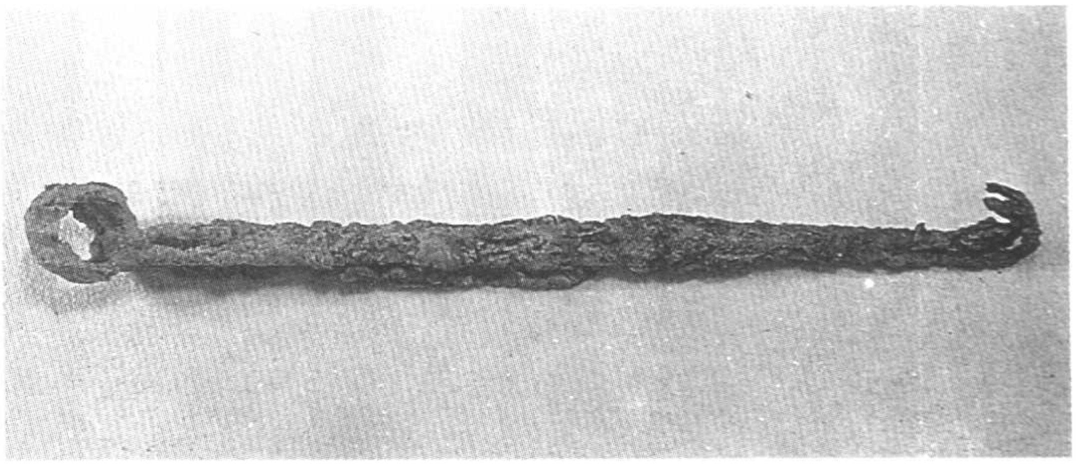
后藏室铁器

1. 铁三足架(G59－1)



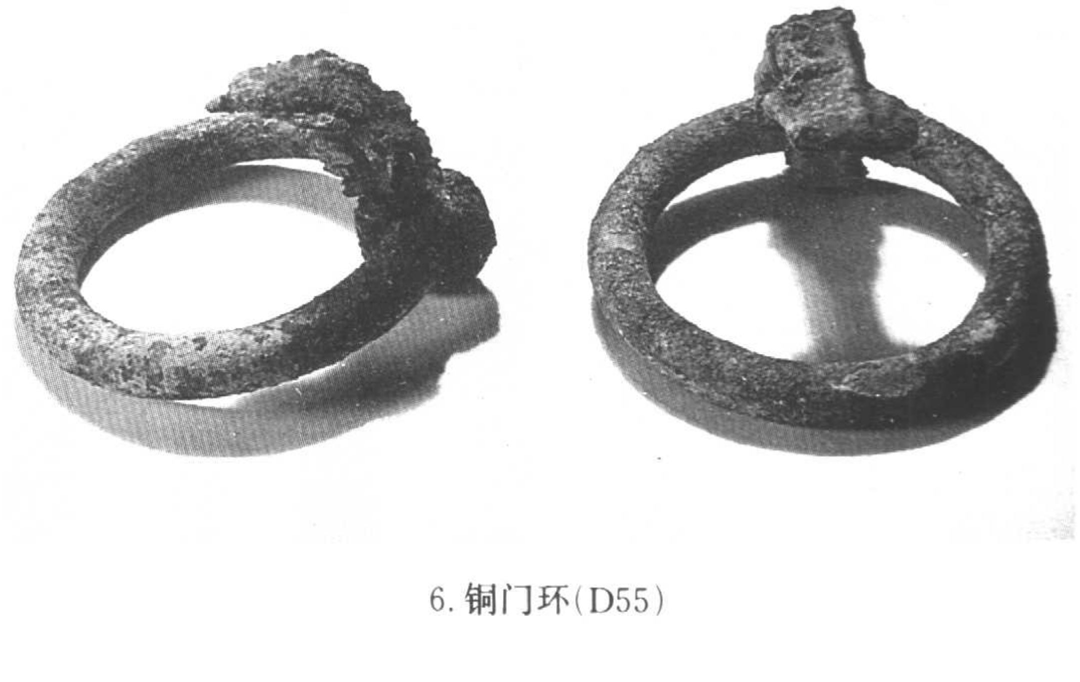
4. 铁叉(G59－10、11)

2. 铁三足架(G59－7)



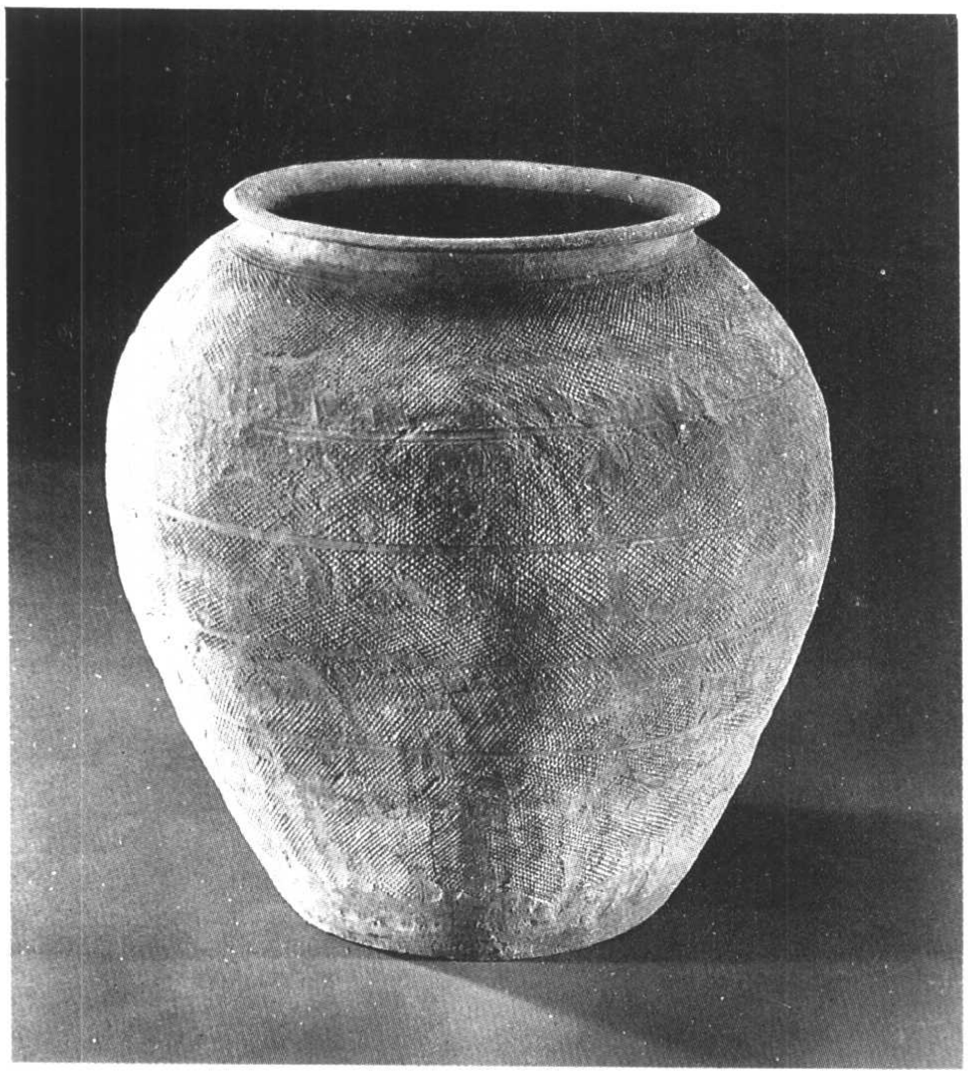
5. 铁鼎钩(G43)

3. 铁三足架(G59－8)

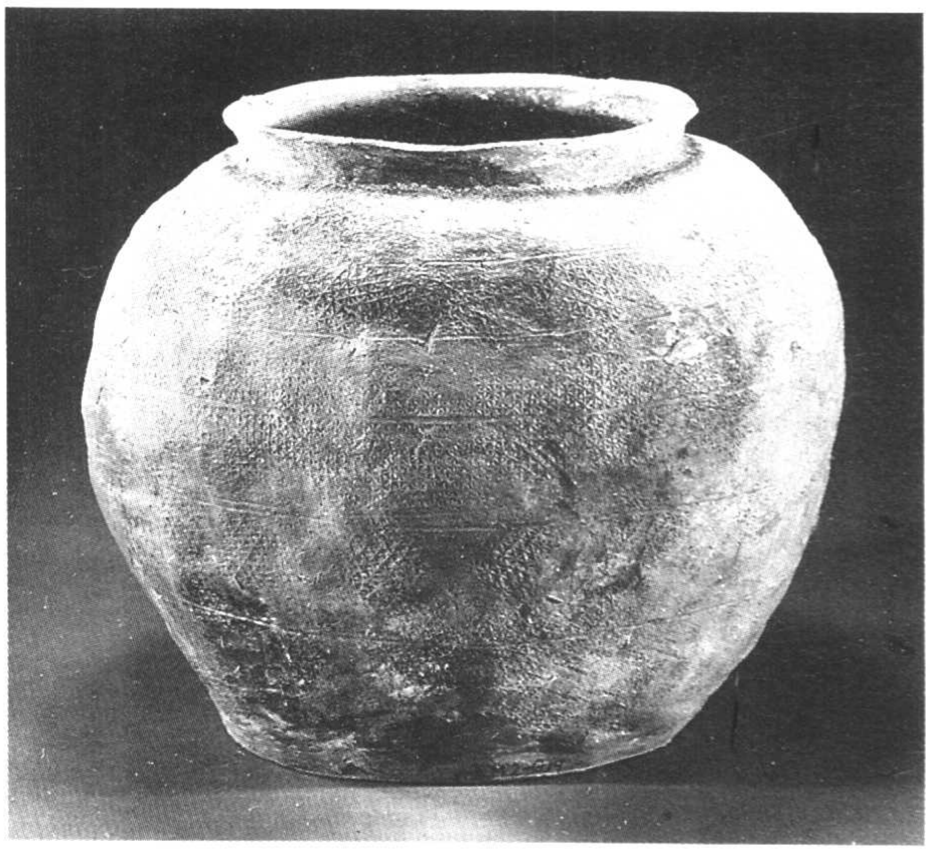


6. 铜门环(D55)

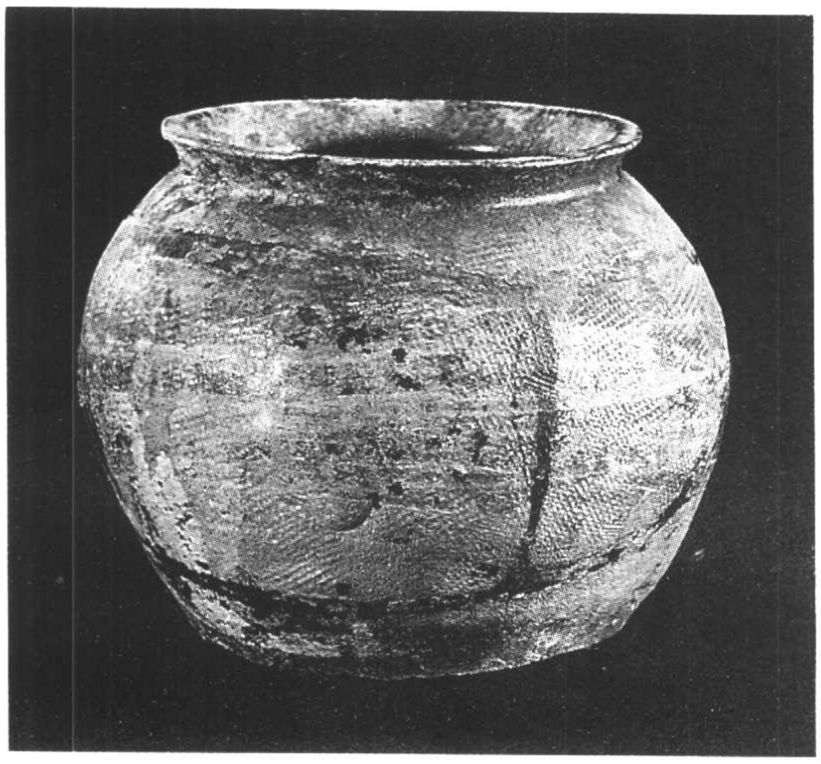
后藏室铁器、铜器



1. 瓮Ⅰ(G13)



2. 瓮Ⅱ(G19)

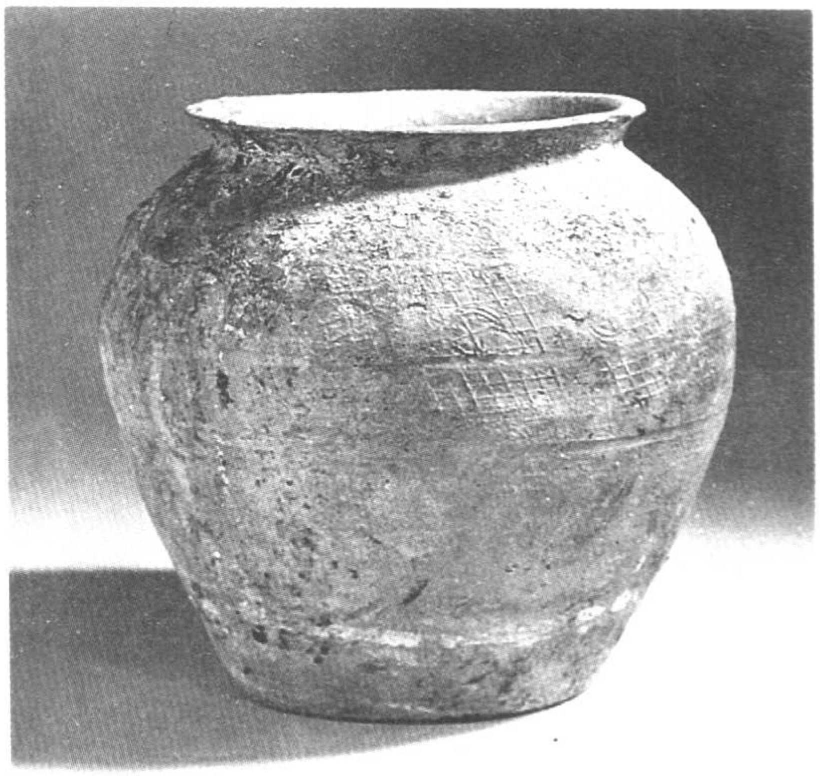


3. 罐Ⅱ①(G31)

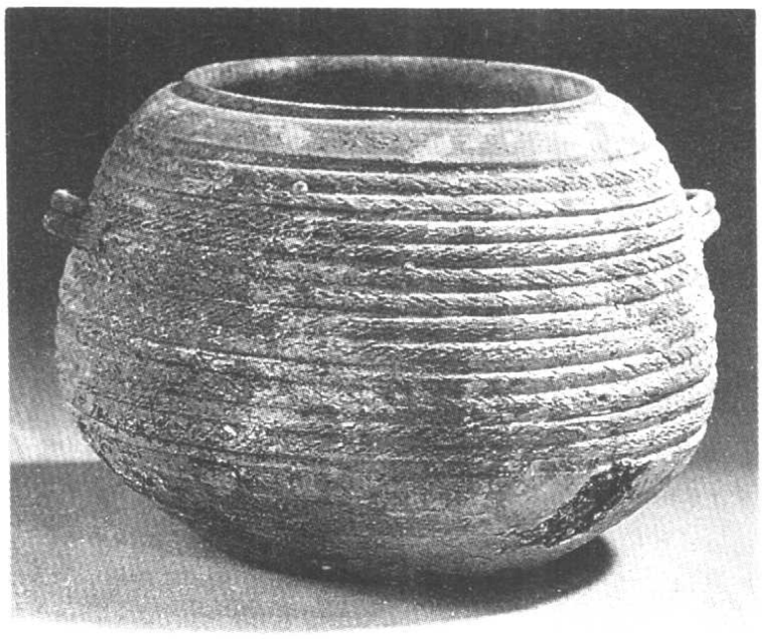
4. 罐Ⅱ①(G90)

后藏室陶器

1. 瓮Ⅱ(G17)

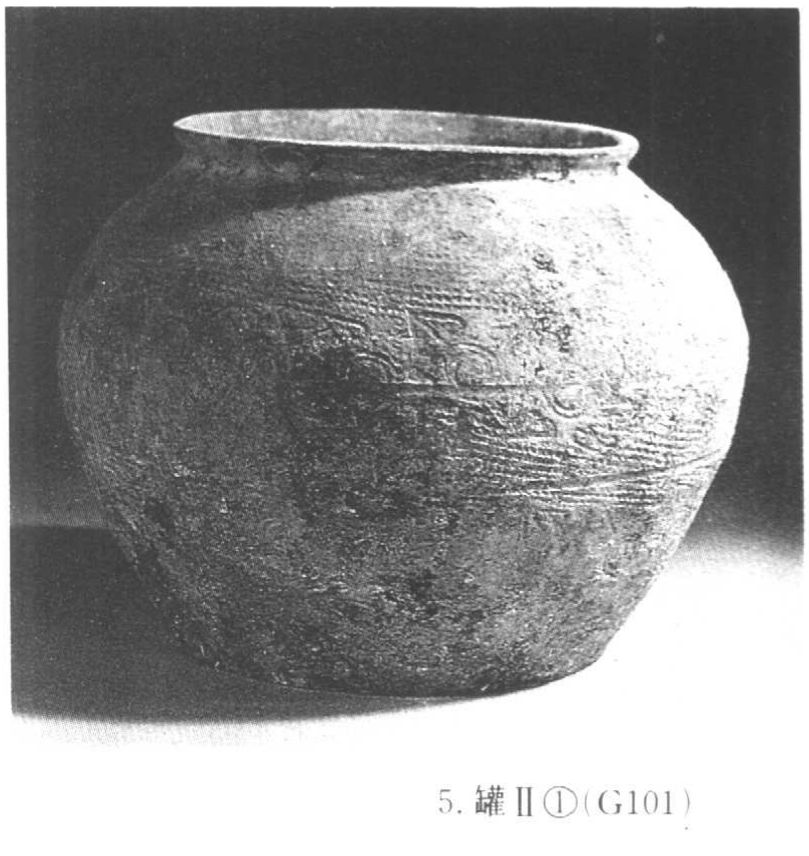


2. 罐Ⅱ①(G 92)



3. 双耳罐(G52)

4. 罐Ⅱ①(G28)



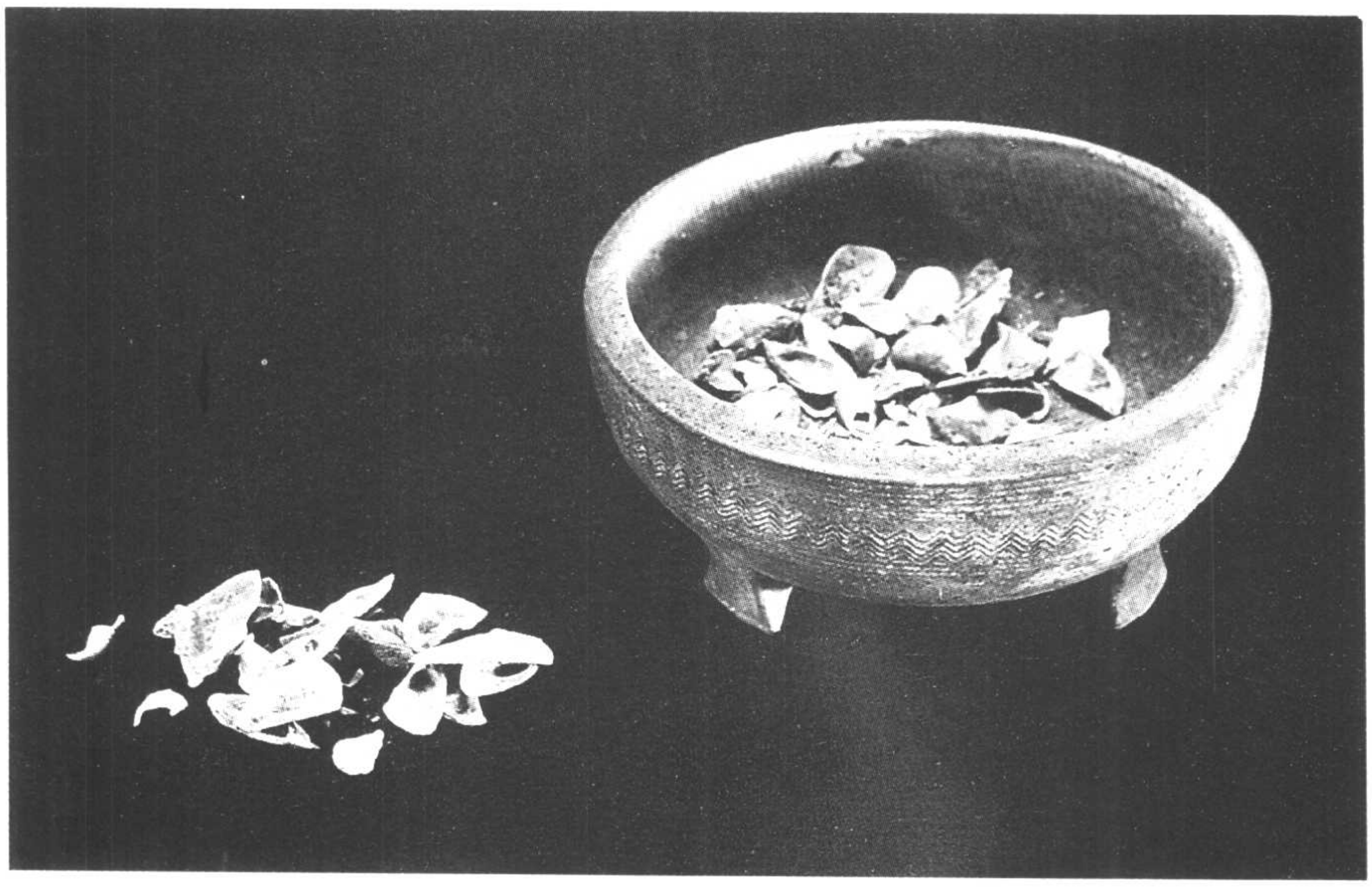
5. 罐Ⅱ①(G101)

后藏室陶器

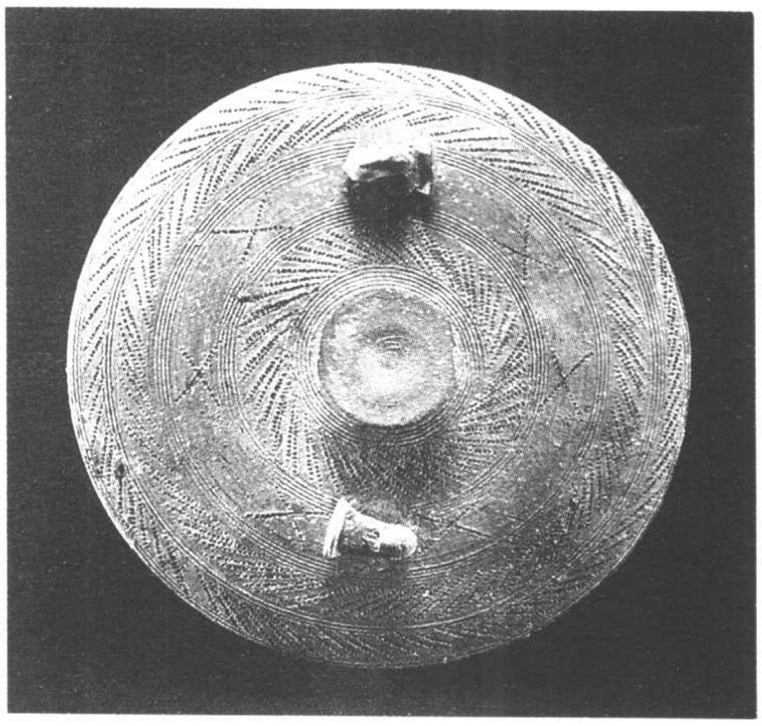
1.瓿Ⅱ(G5).

2.鼎乙Ⅰ(G60、G20)

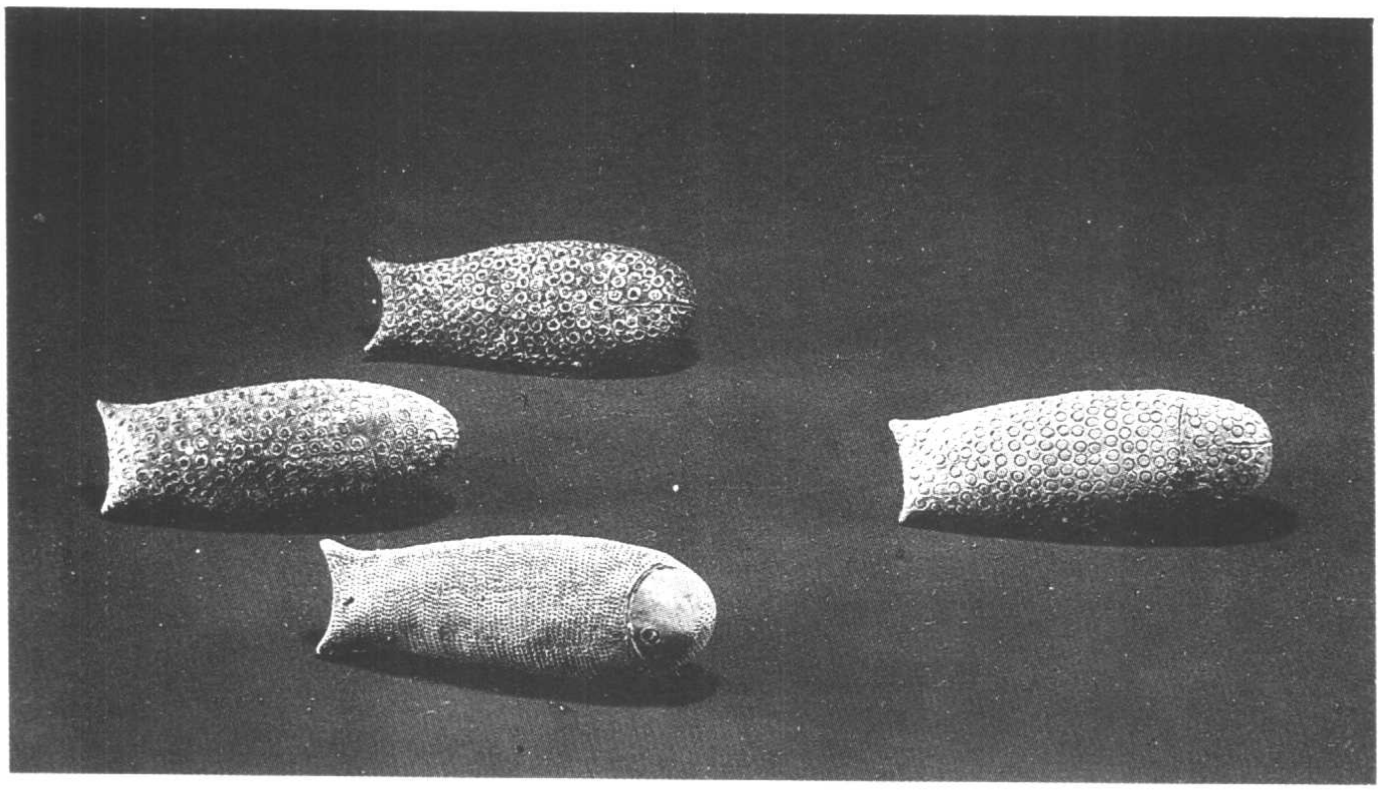
后藏室陶器



1. 三足盒Ⅰ(G71)

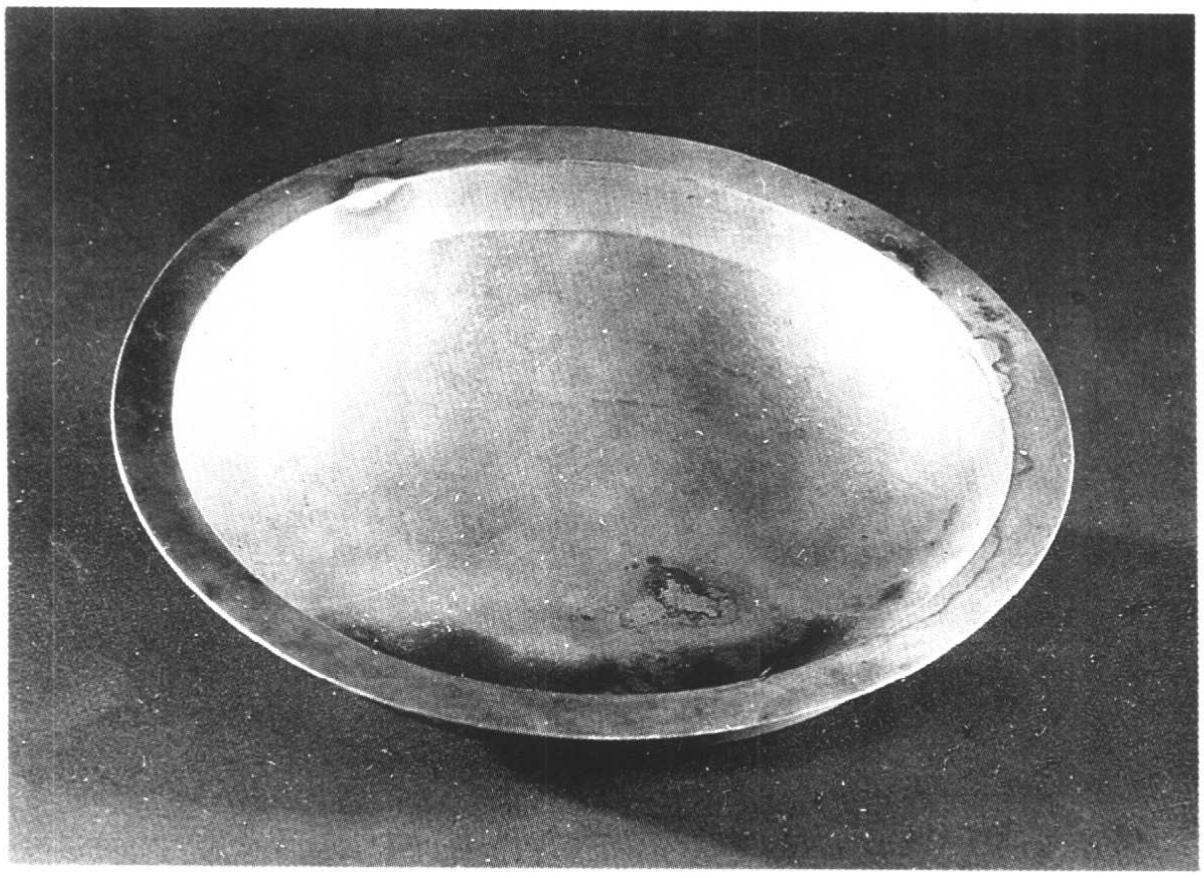


2. 器盖(G115)



3. 鱼形响器(G87)

后藏室陶器



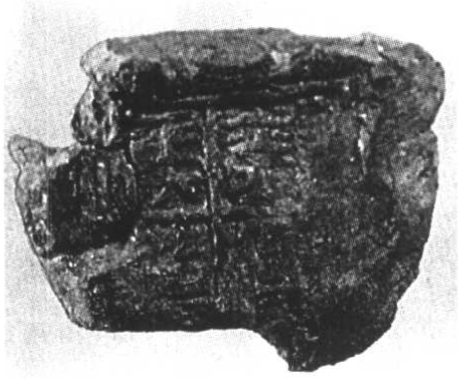
1. 银洗(G82)

2. “泰官”封泥(G119)

3. 背面

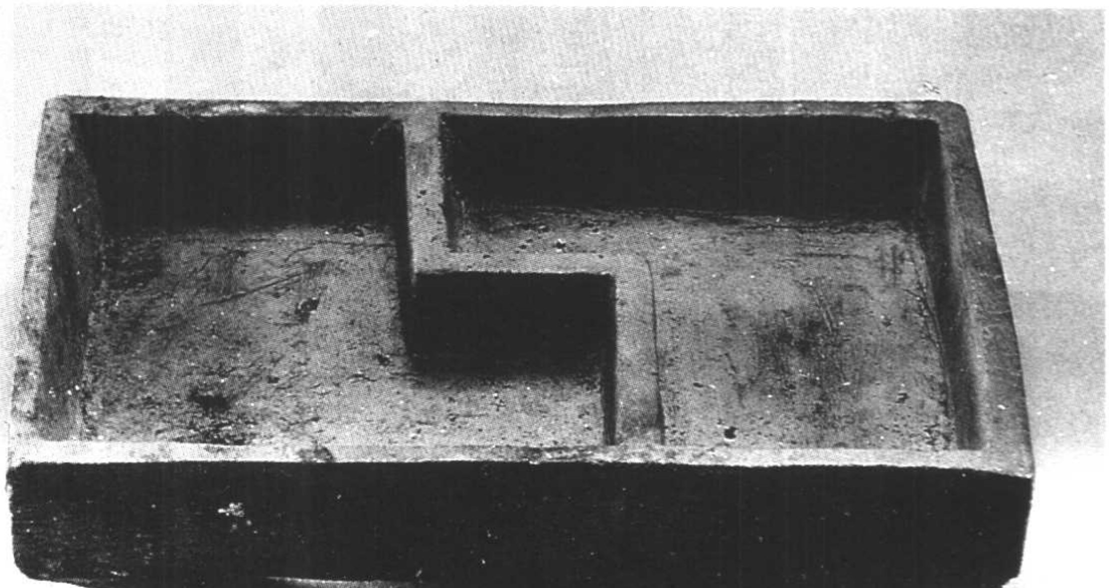
4. “泰官”封泥(G128)

5. “泰官”封泥(G130)



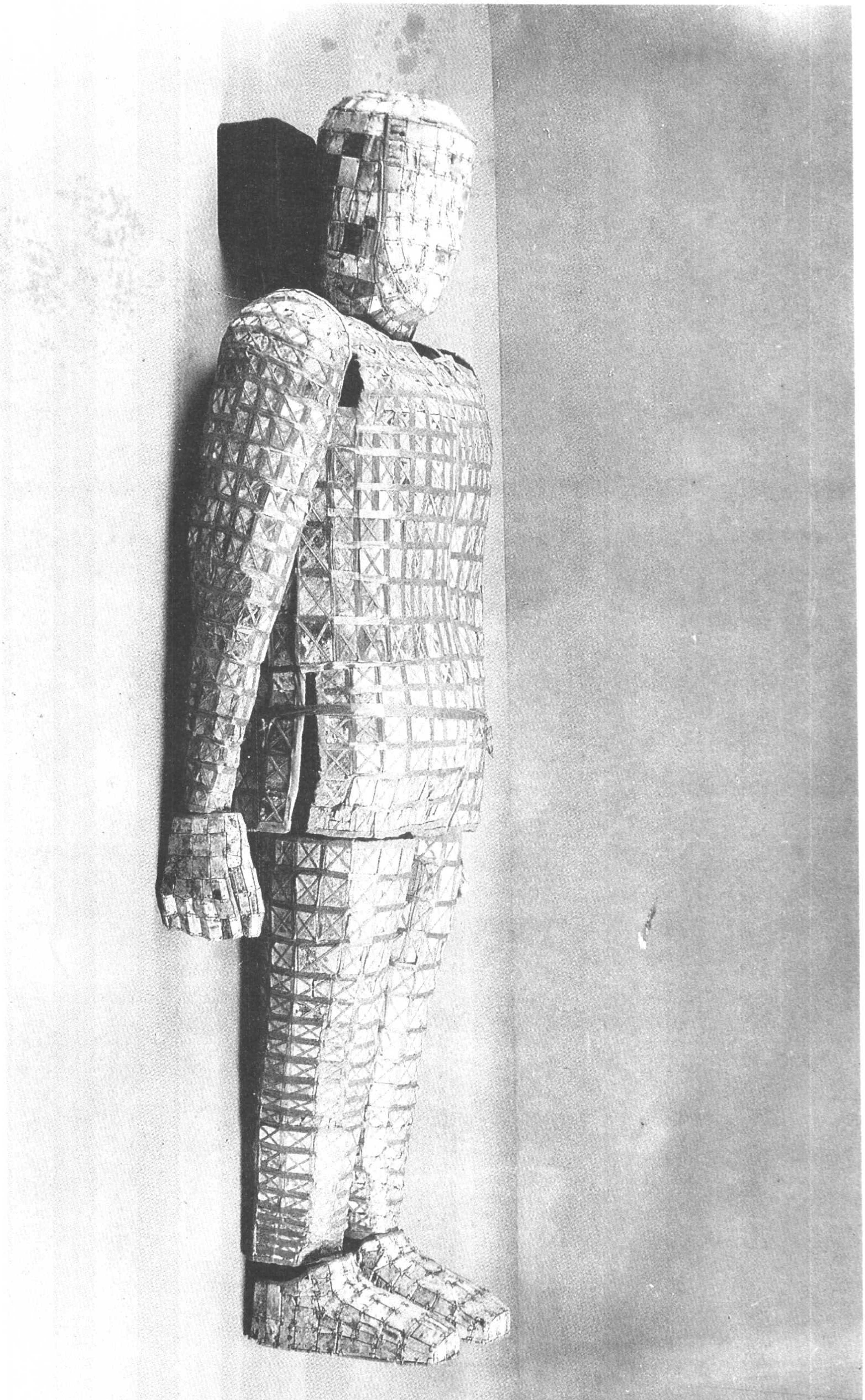
6. “鄰鄉候印”封泥 (G 123)

7. 背面

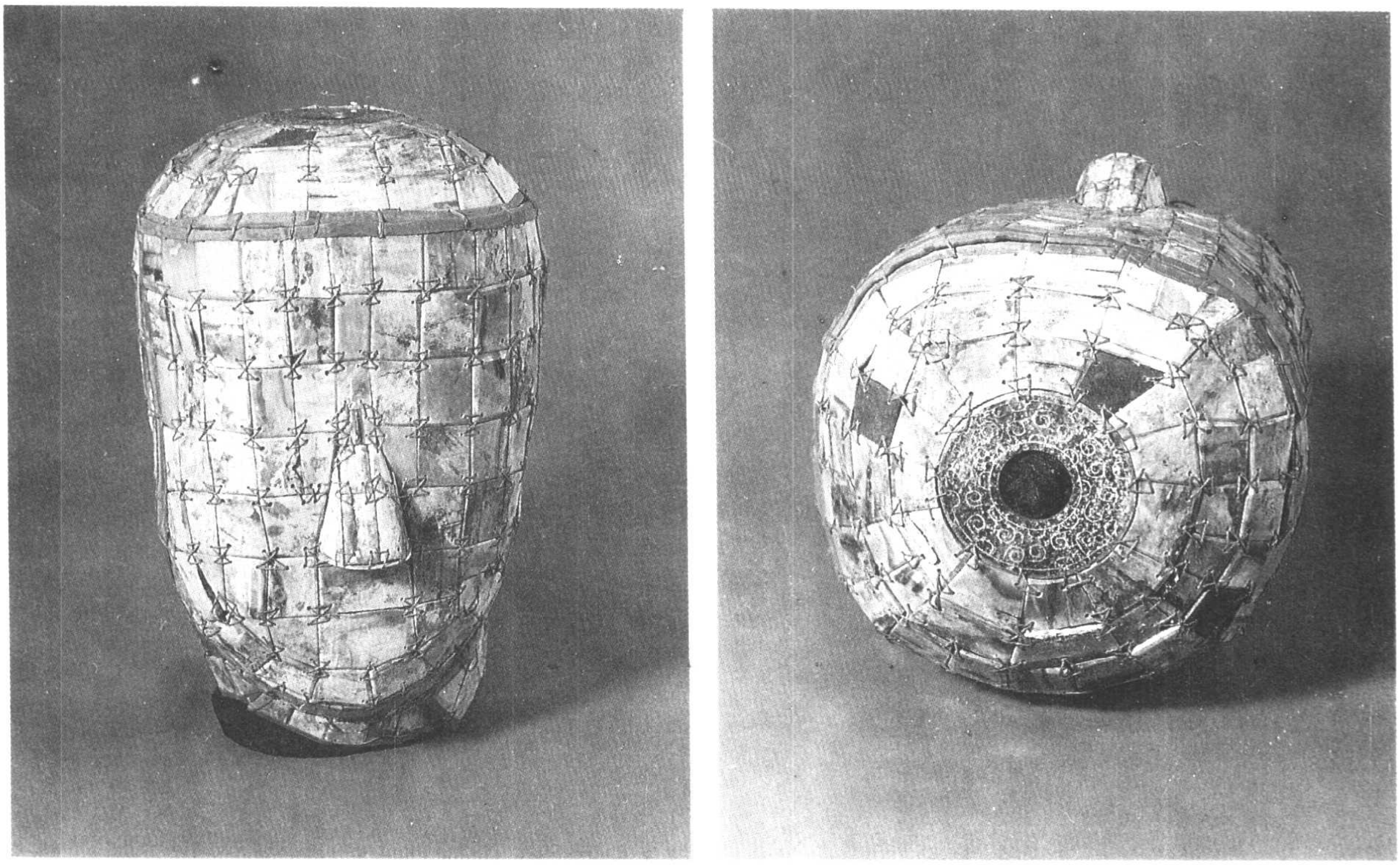


8. 滑石炉(G12)

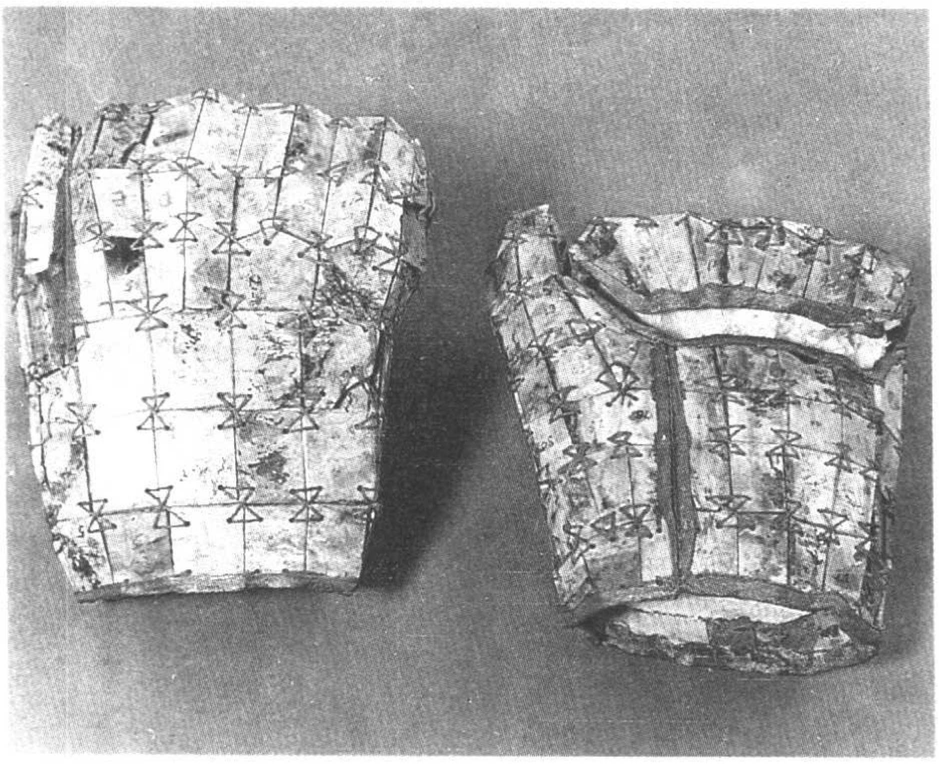
后藏室器物



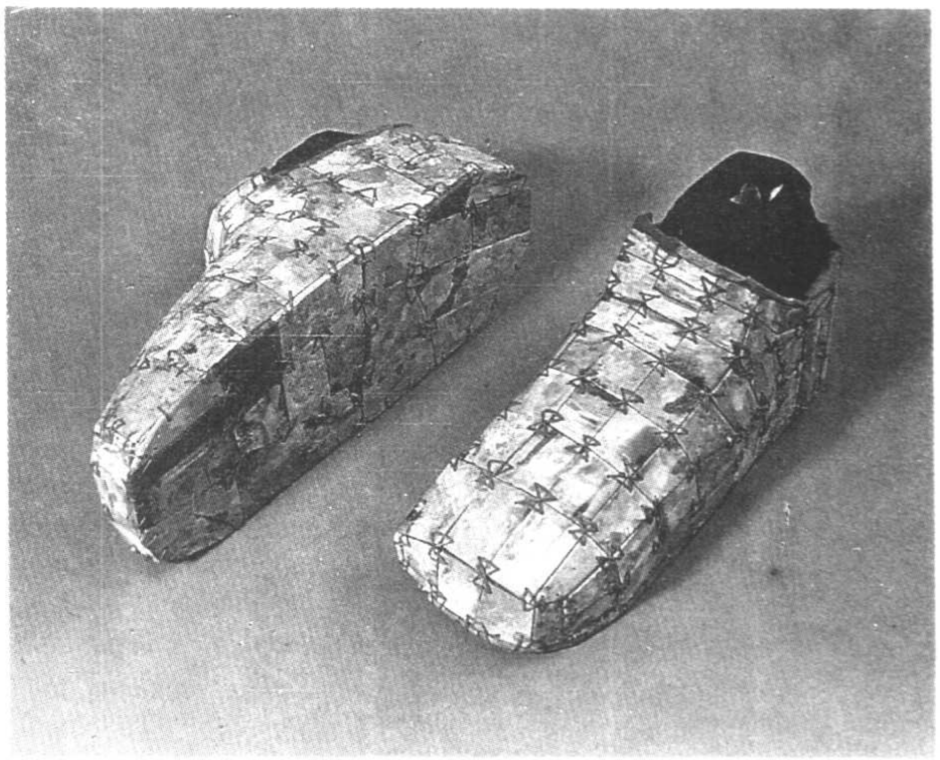
修复后的“丝缕玉衣”



1. 头套

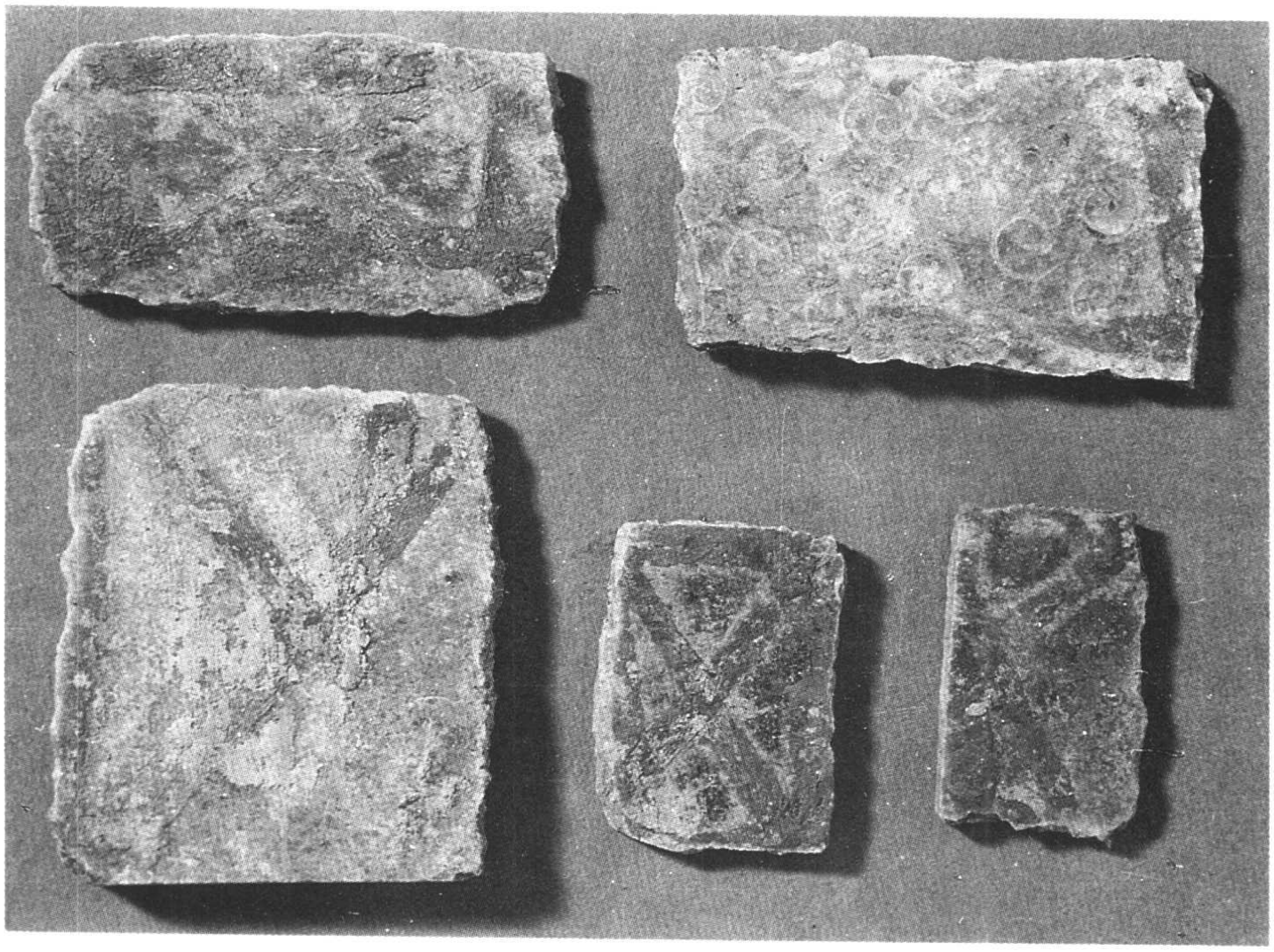


2. 手套



3. 鞋

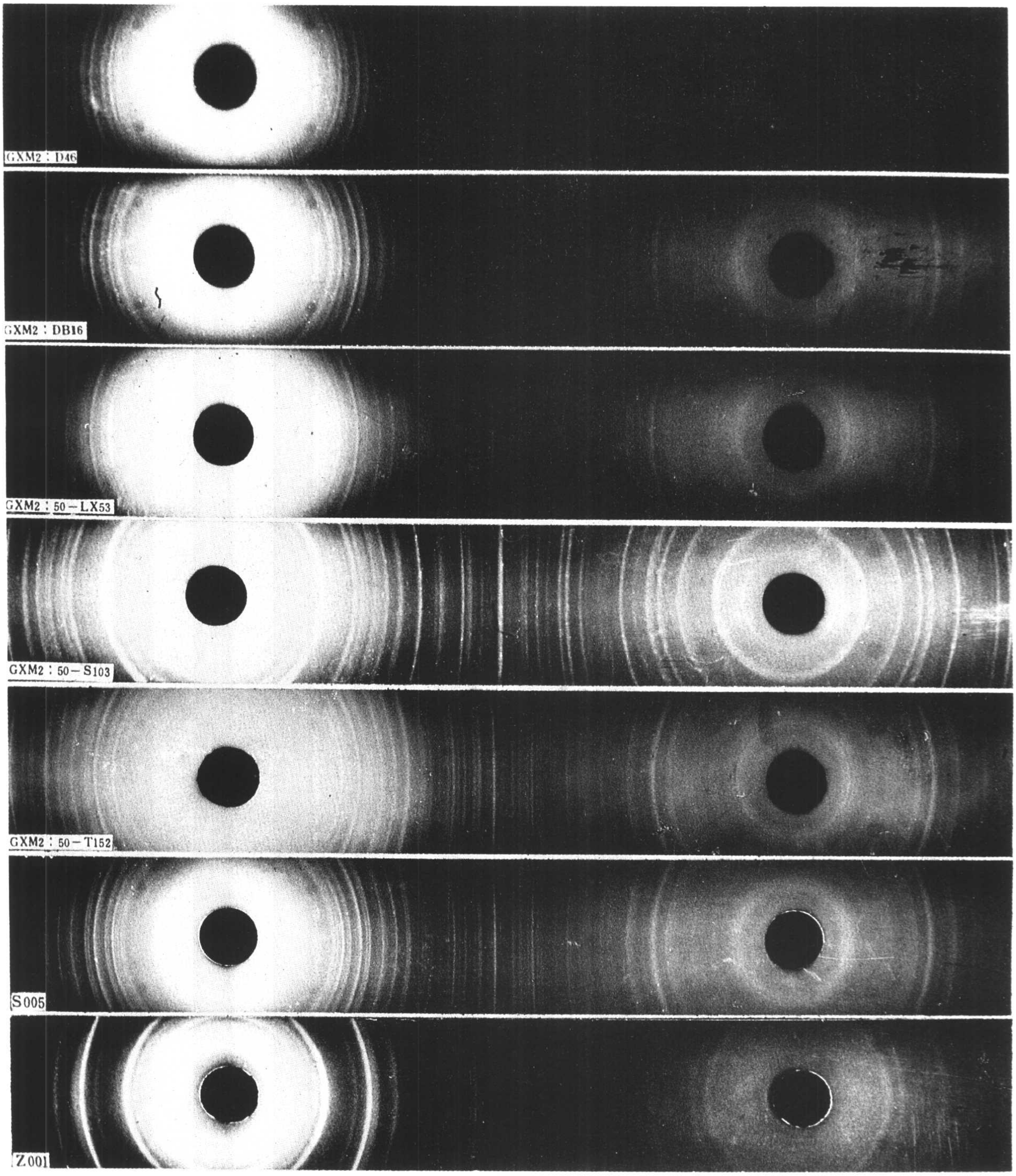
修复后的“丝缕玉衣”



1."玉衣"上粘贴织物痕迹

2.上身和头罩部分玉片

"丝缕玉衣"的清理复原


GXM2：D46
GXM2：DB16
GXM2：50－LX53
GXM2：50－S103
GXM2：50－T152
S005
Z001

玉器X射线粉晶照相

GXM2：D44

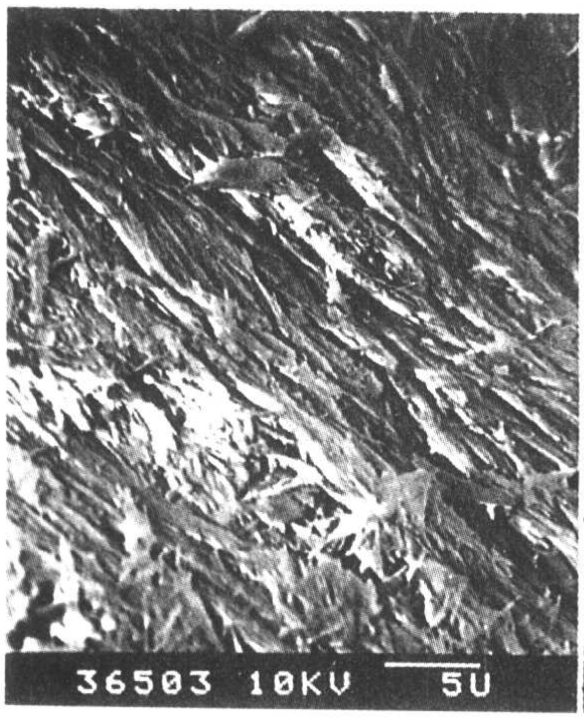
GXM2：D46

GXM2：D77

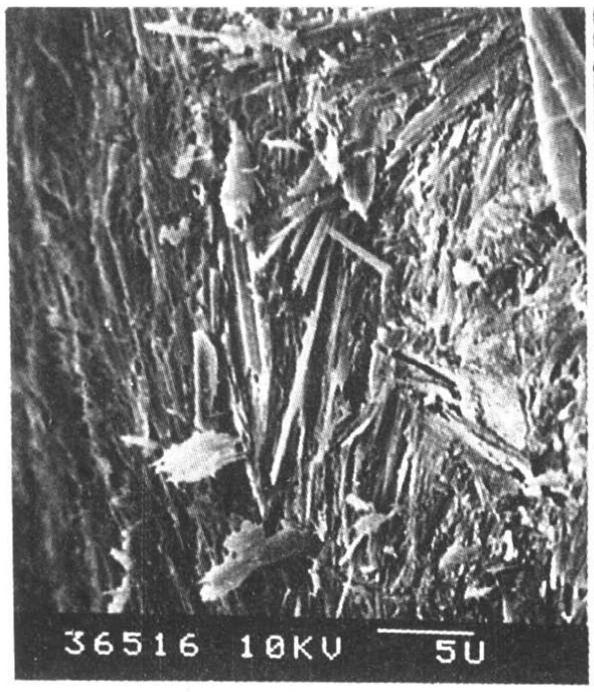
GXM2：D190

GXM2：DB14

GXM2：DB16

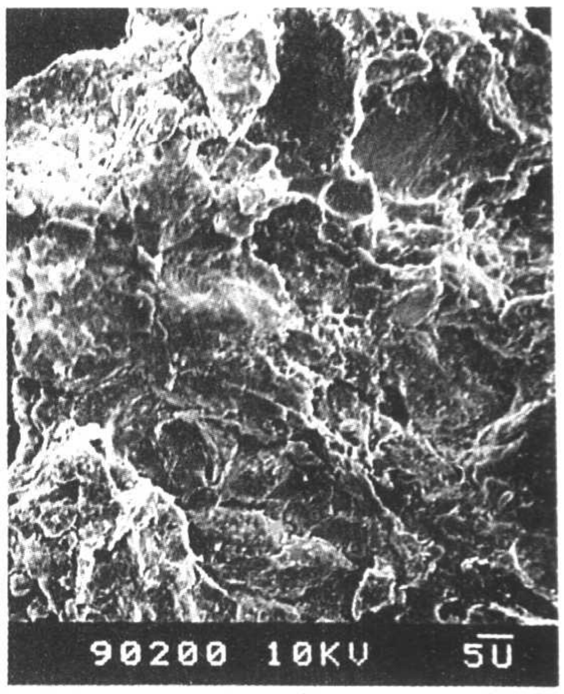


玉器显微结构



GXM2：RK21

GXM2：50－S016



GXM2：50－S103

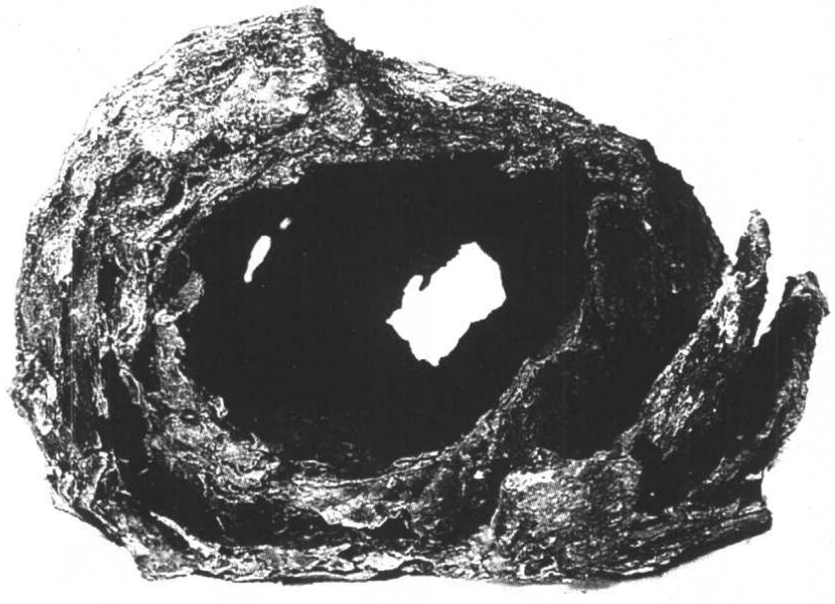
GXM2：50－S186

GXM2：50－S286

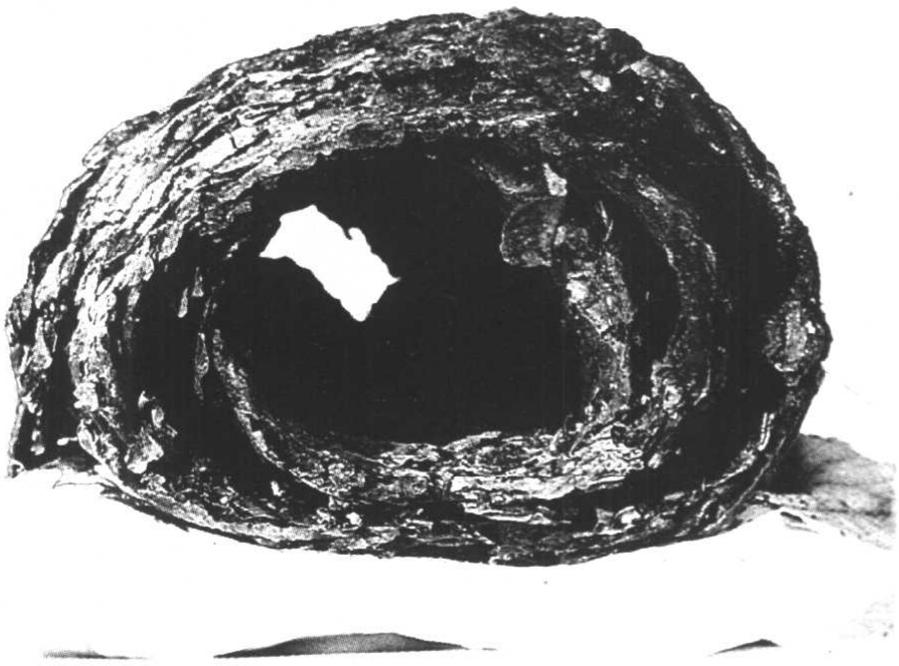
GXM2：50－S315

玉器显微结构

1. 侧面

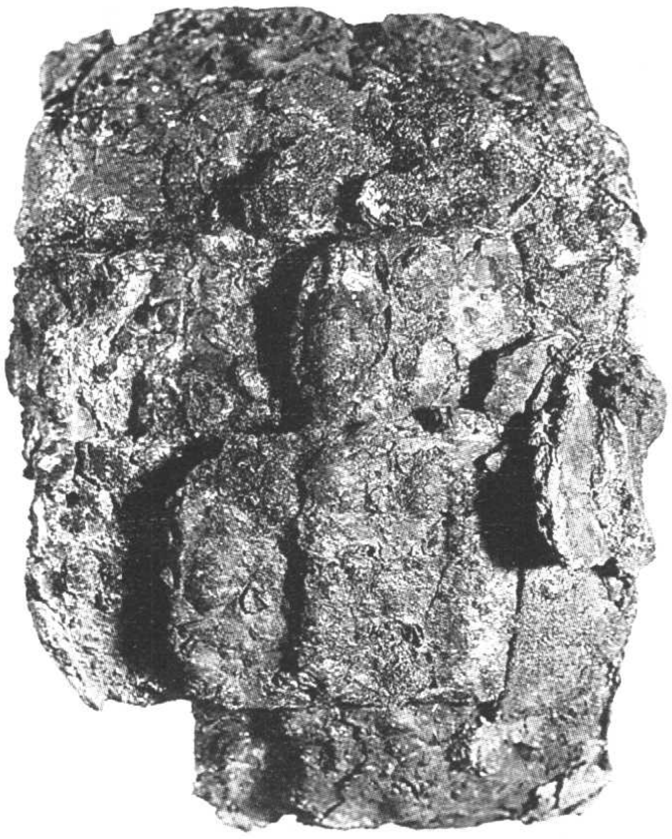


2. 顶视

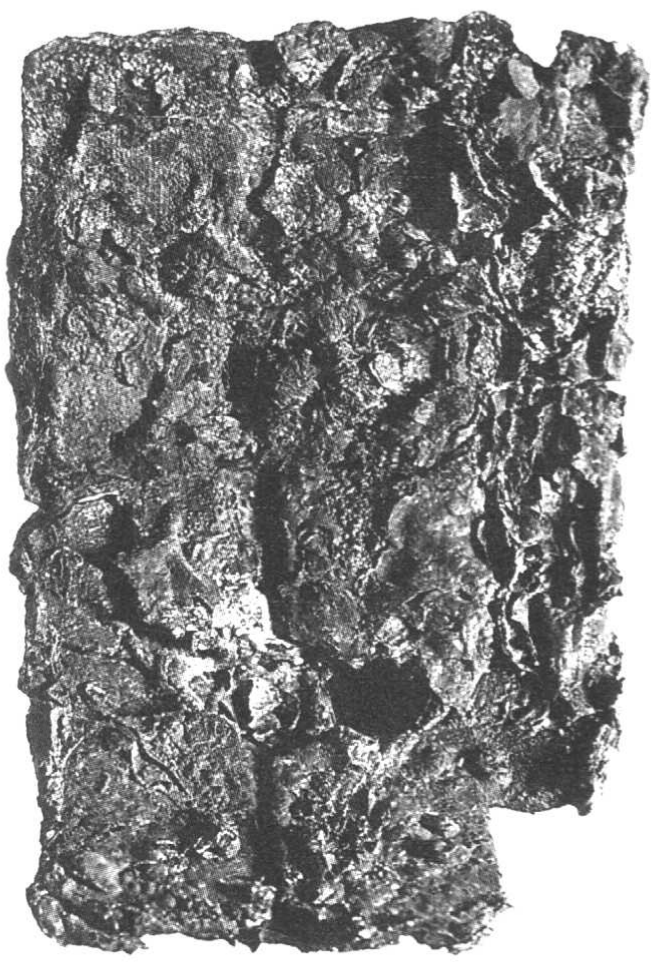


3. 底视

铁甲(C233)出土情状

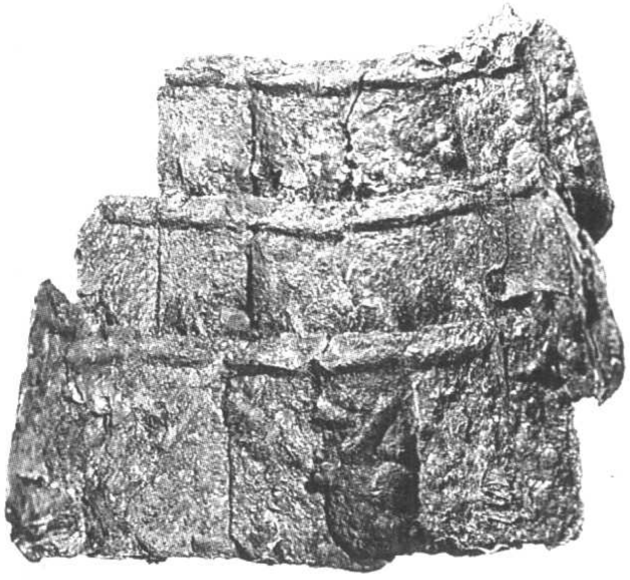


1. 正面局部



4. 背面编带痕

2. 正面局部编带痕

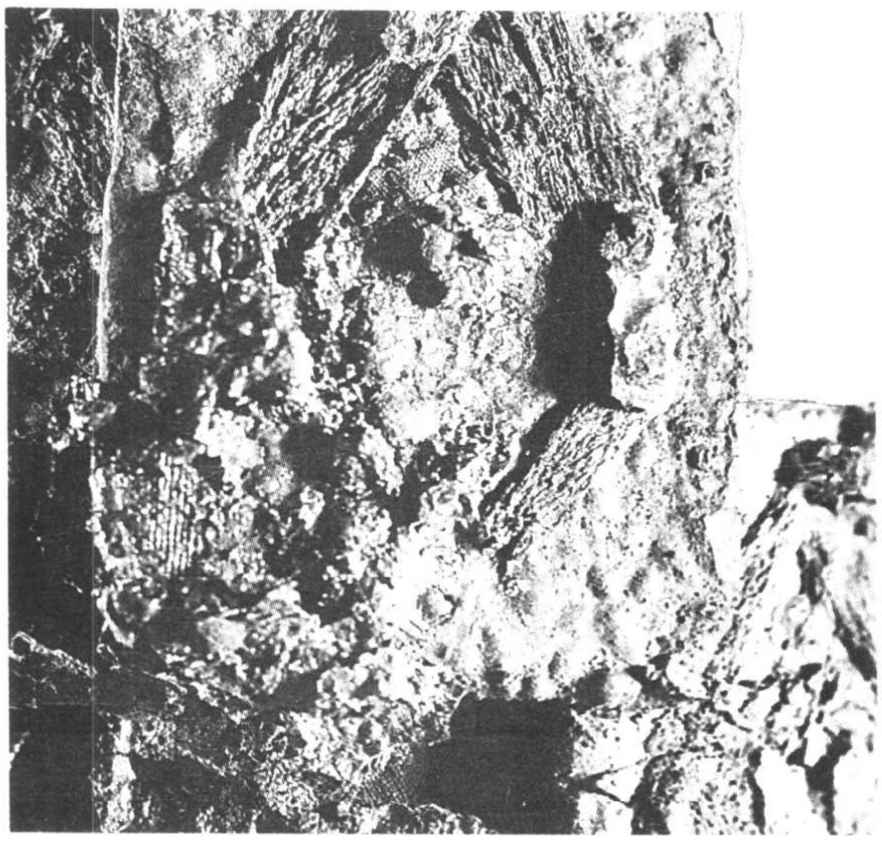


5. 背面编带痕

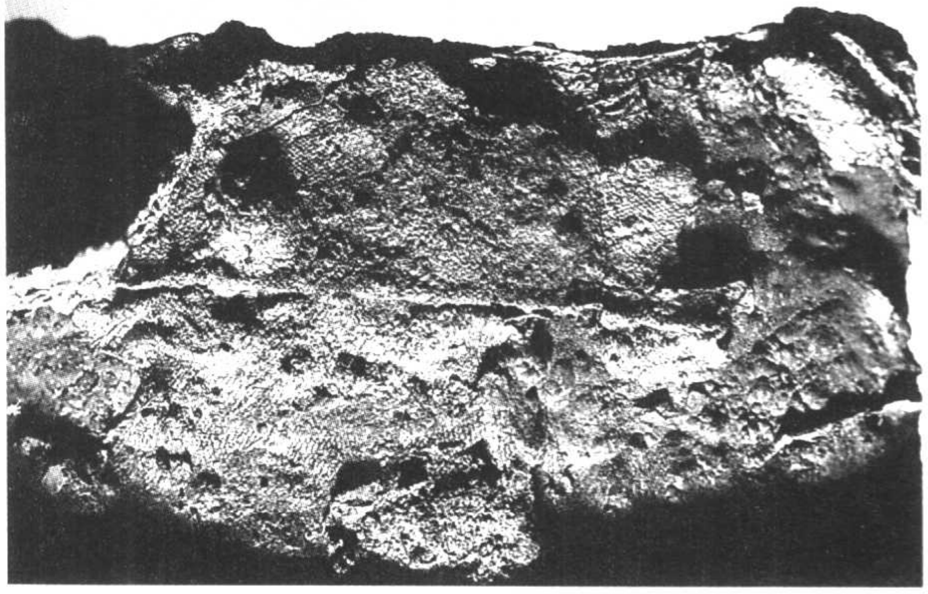
3. 正面局部

6. 背面编带痕

铁甲(C233)出土情状



1. 甲片上丝带装饰

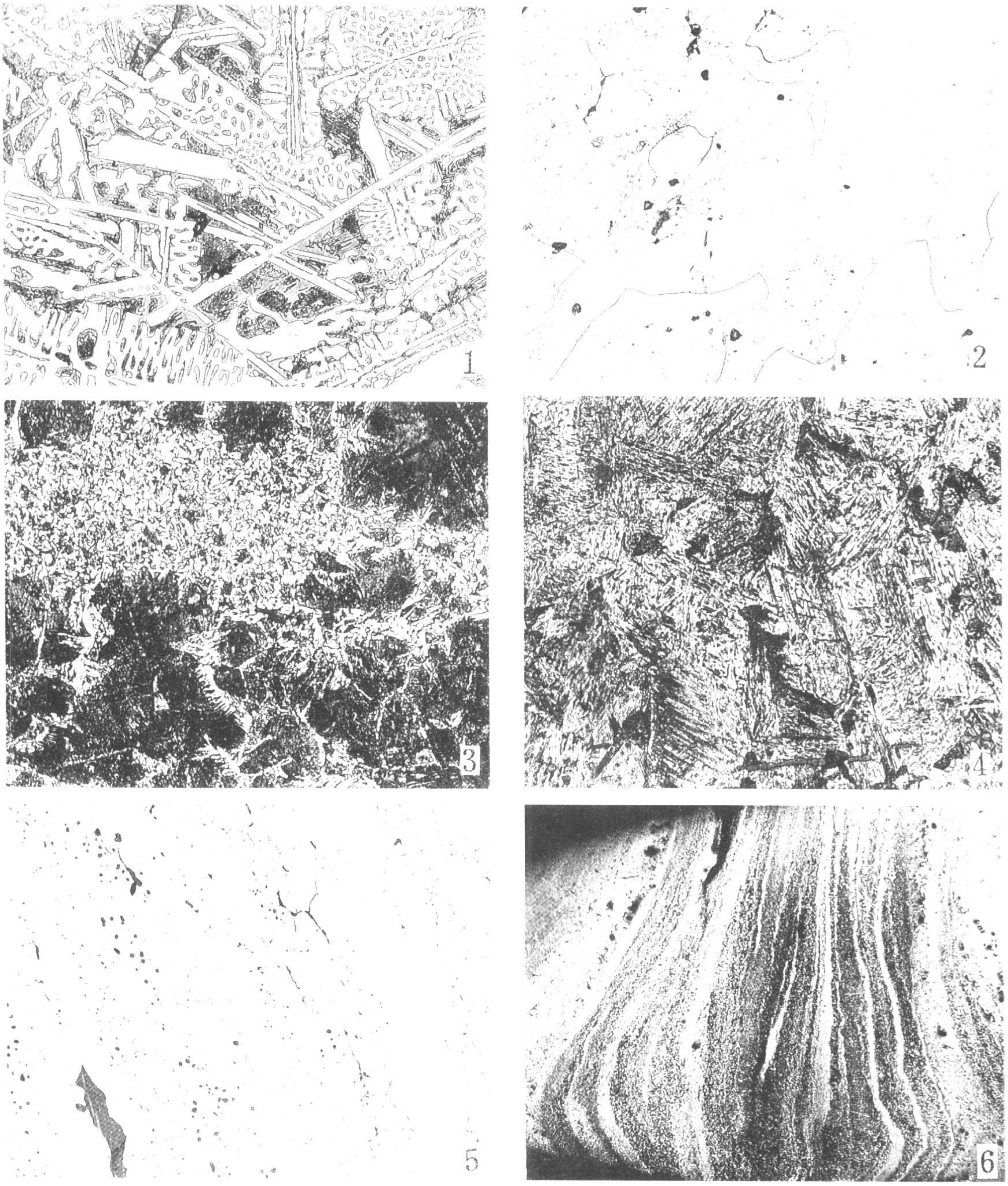


2. 包边

3. 铁甲复原正面

4. 铁甲复原背面

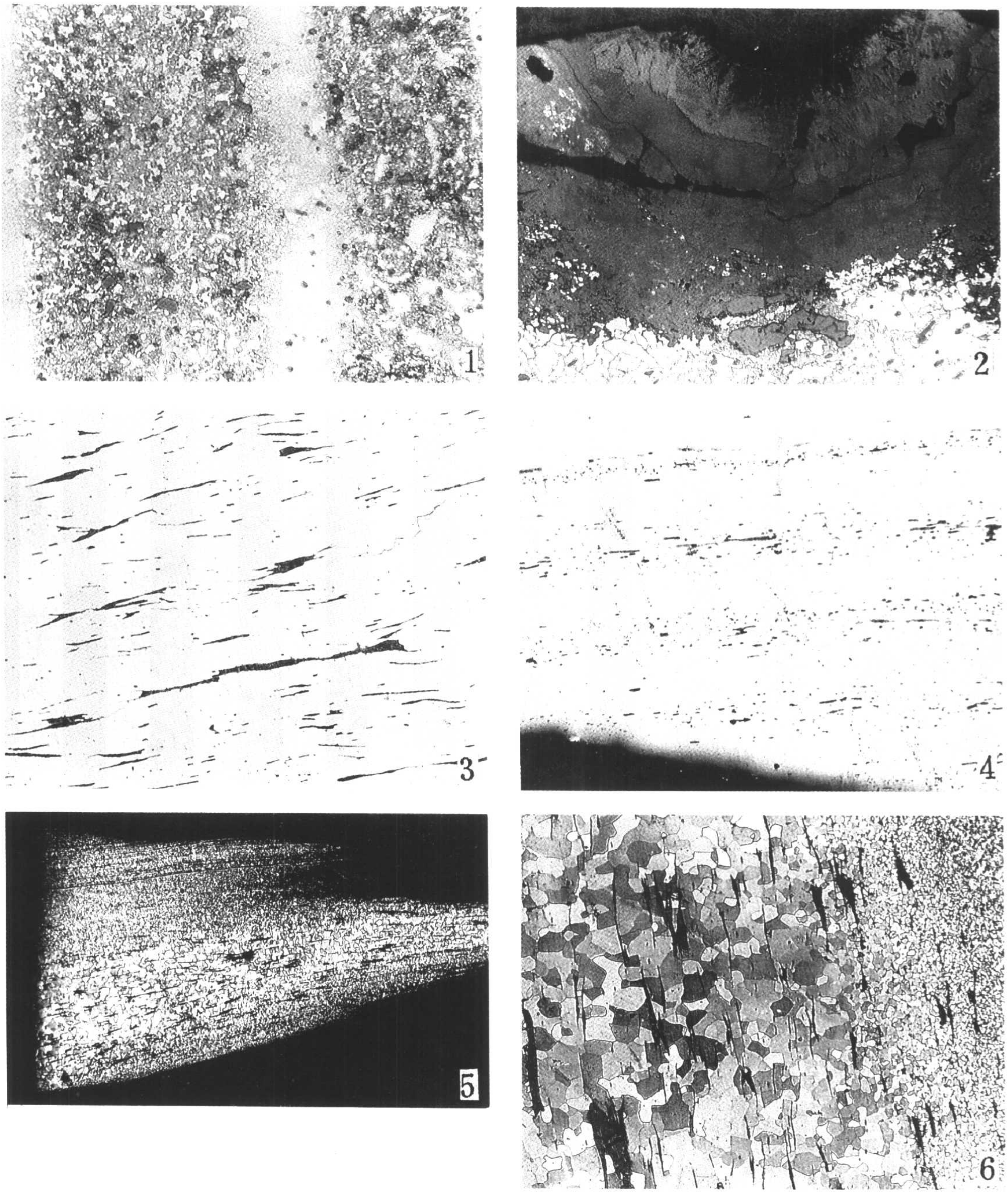
铁甲（C 233）清理复原



铁器鉴定

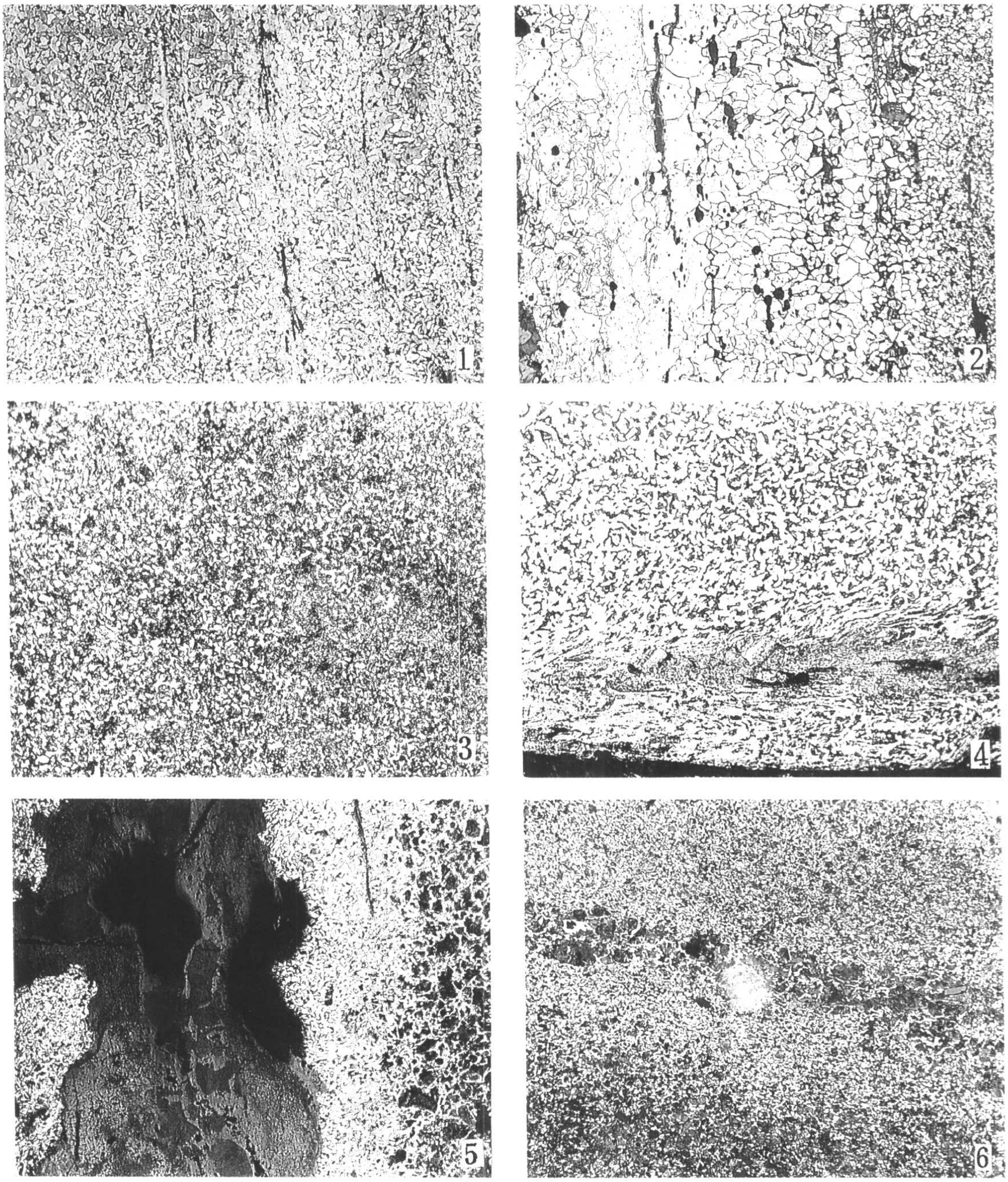
1. 铁鼎的金相组织 ×200 过共晶白口铁 3%硝酸酒精侵蚀　2. 铁甲片的金相组织 ×200 3%硝酸酒精侵蚀　3. 铁剑的基体金相组织 ×200 3%硝酸酒精侵蚀　4. 剑的淬火马氏体组织 ×200 3%硝酸酒精侵蚀　5铁方锉的夹杂物 ×50 未侵蚀　6. 铁方锉的全景金相组织 ×10 3%硝酸酒精侵蚀

图版二一一(CCⅩⅠ)



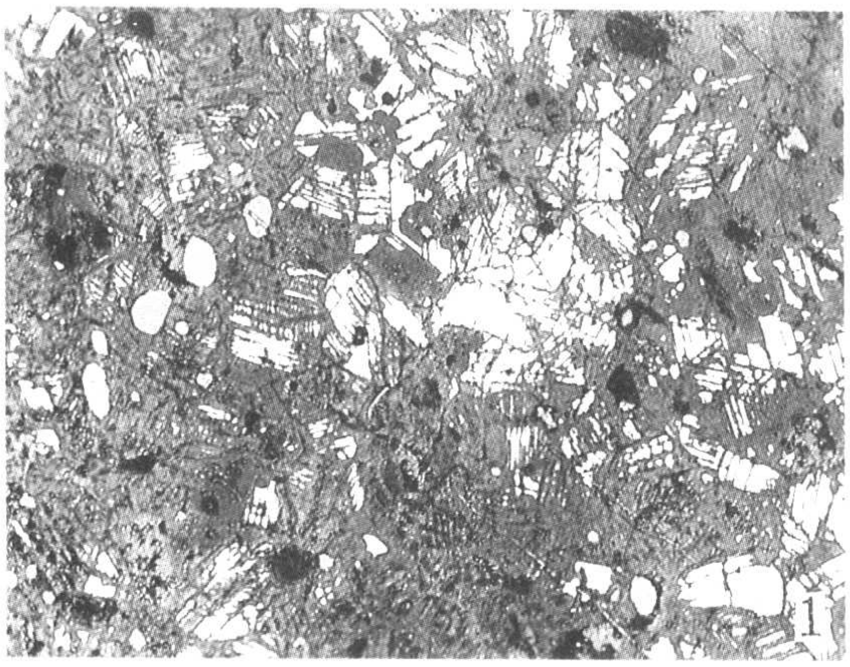
铁器鉴定

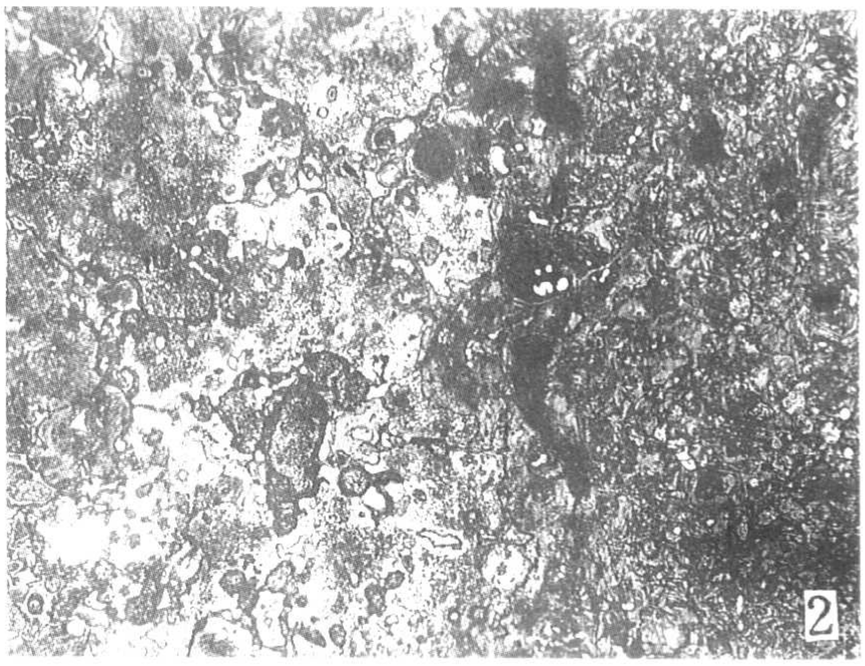
1.铁方锉的基体组织与夹杂物 ×200 3%硝酸酒精侵蚀　2.铁方锉的锉齿形貌 ×100 3%硝酸酒精侵蚀　3.铁锛的氧化亚铁—硅酸盐夹杂 ×50 未侵蚀　4.铁锛的硅酸盐夹杂带 ×50 未侵蚀　5.铁锛的金相组织 ×10 3%硝酸酒精侵蚀　6.铁锛的基体金相组织 50 3%硝酸酒精侵蚀

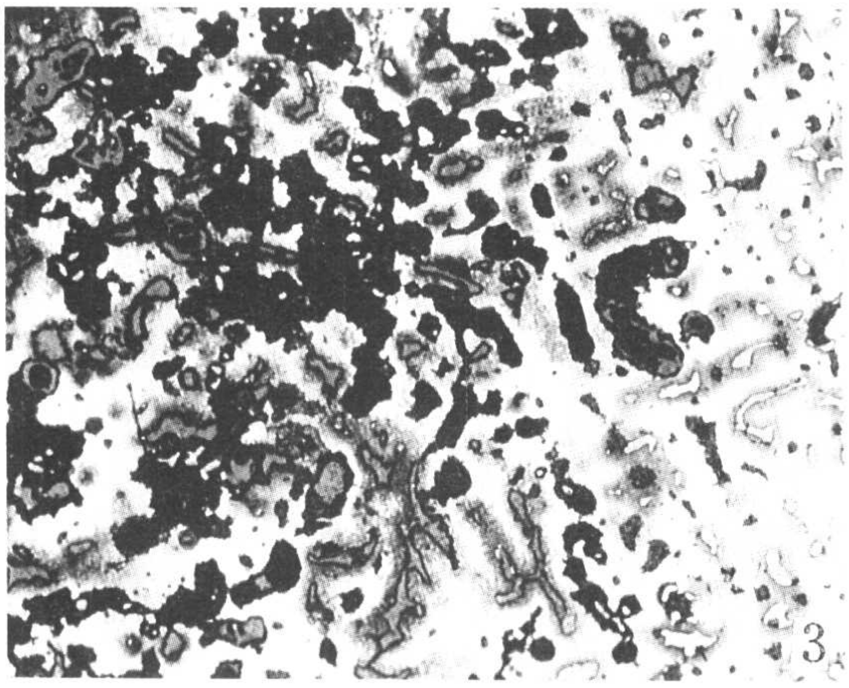


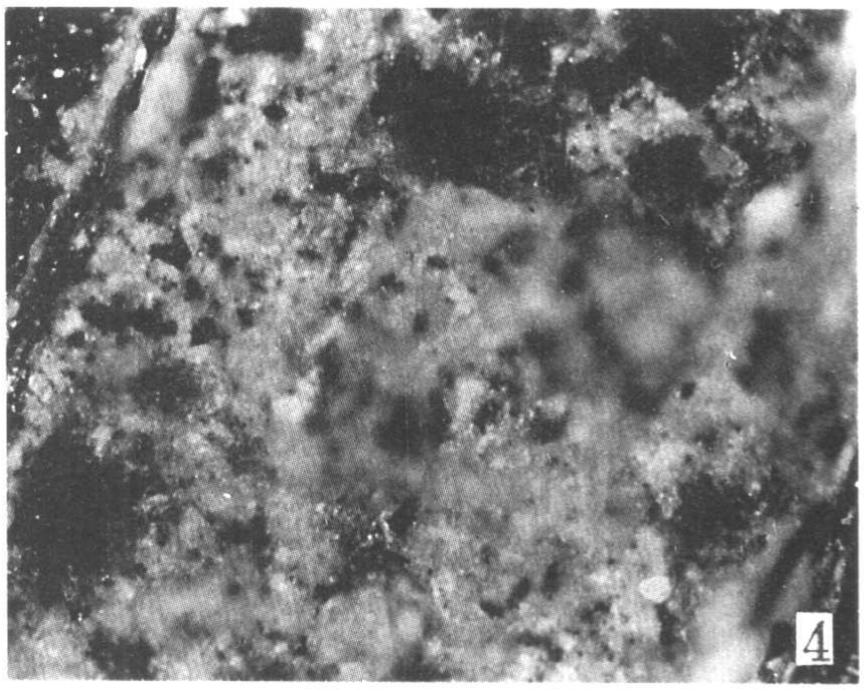
铁器鉴定

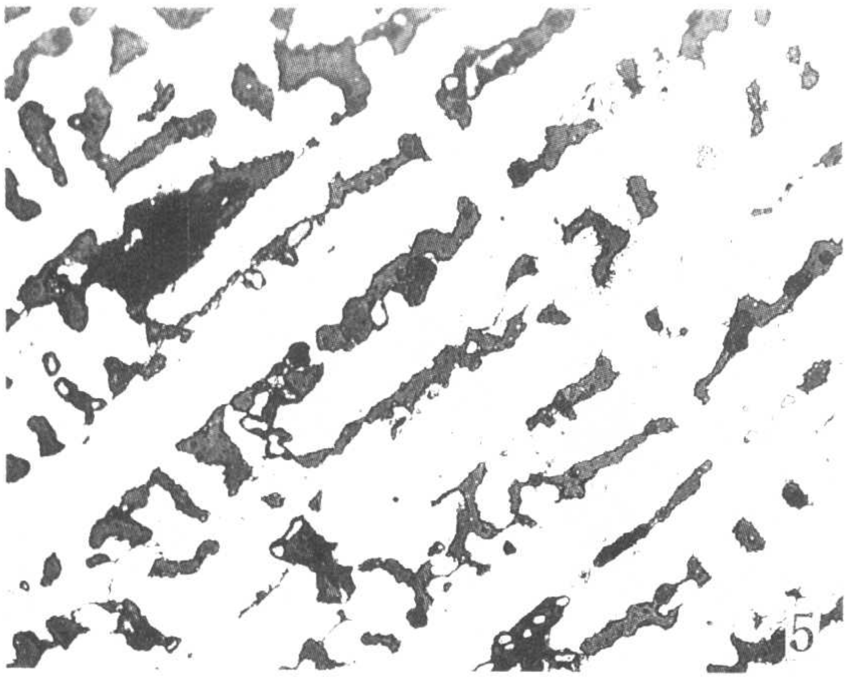
1.铁锛的另一原料的金相组织 ×50 3%硝酸酒精侵蚀　2.铁铲的金相组织 ×100 3%硝酸酒精侵蚀　3.铁削刀的金相组织 ×200 球化珠光体组织 3%硝酸酒精侵蚀　4.铁削刀的金相组织 ×125 铁削刀边部冷锻后的变形带 3%硝酸酒精侵蚀　5.铁箭杆断面全貌金相组织 ×50 中部为锈 靠近锈层为细珠光体+铁素体 边部为粗珠光体+铁素体网　6.铁镢的金相组织 ×100 珠光体+铁素体 高低碳层相同排列

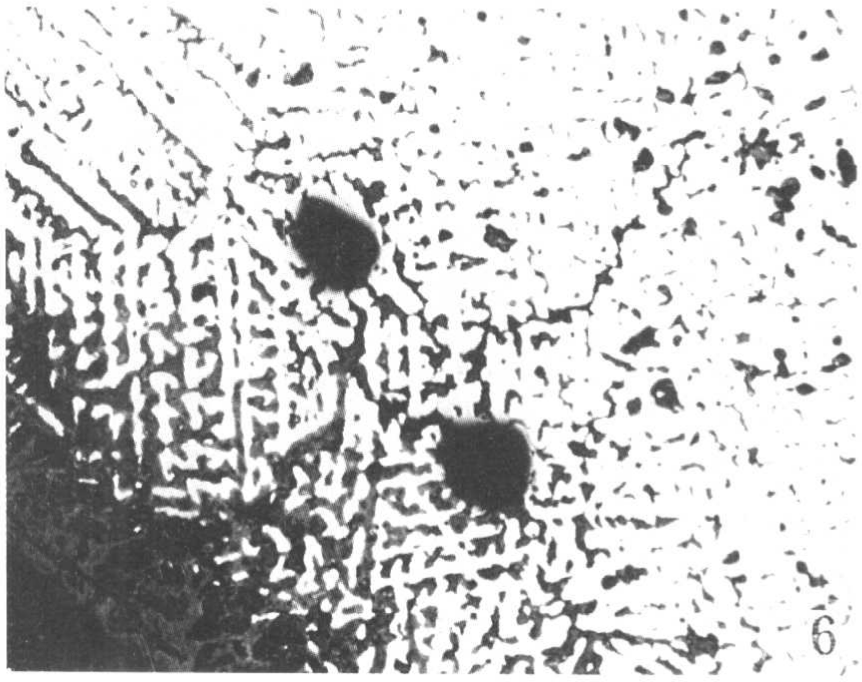






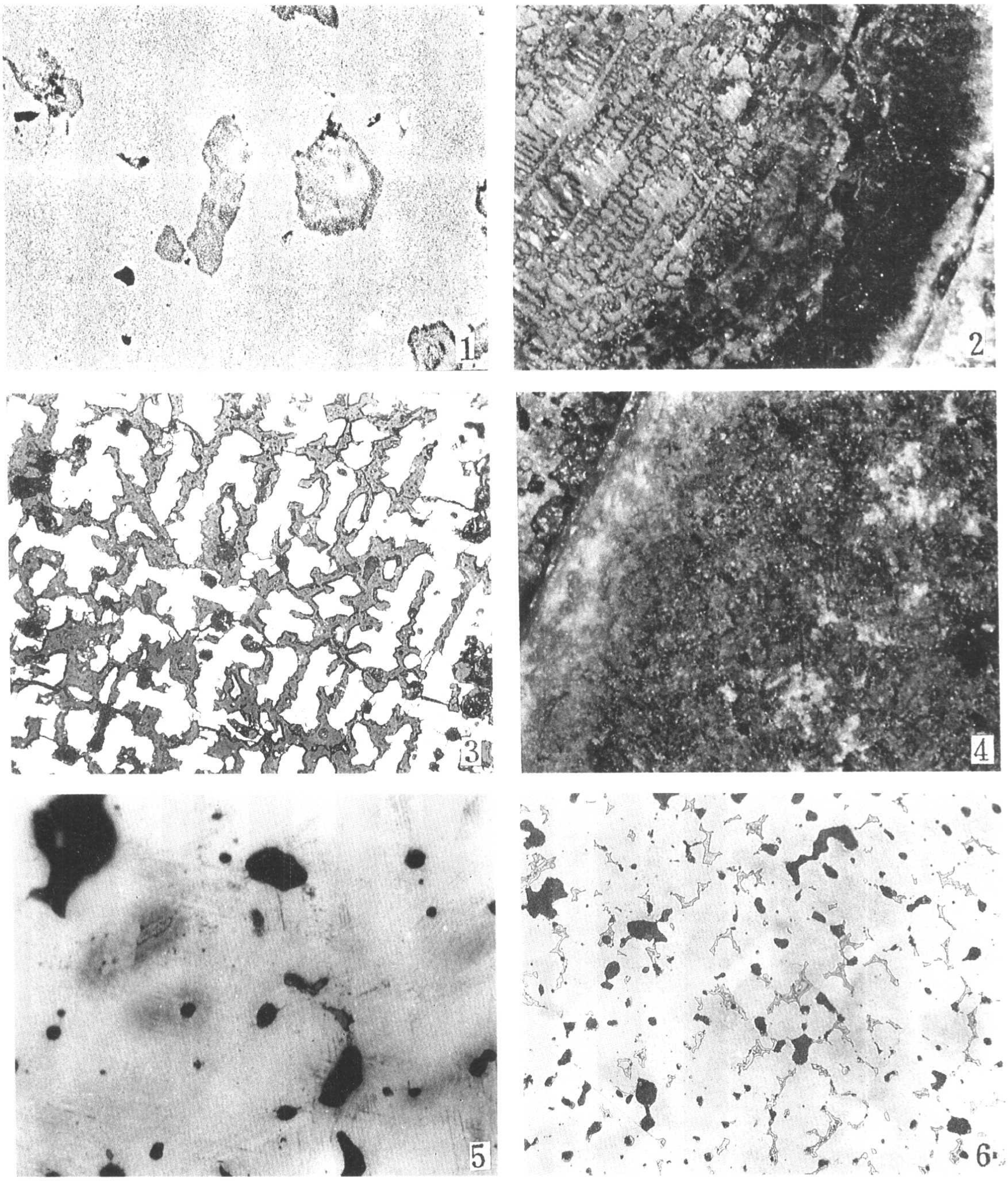






铜器鉴定

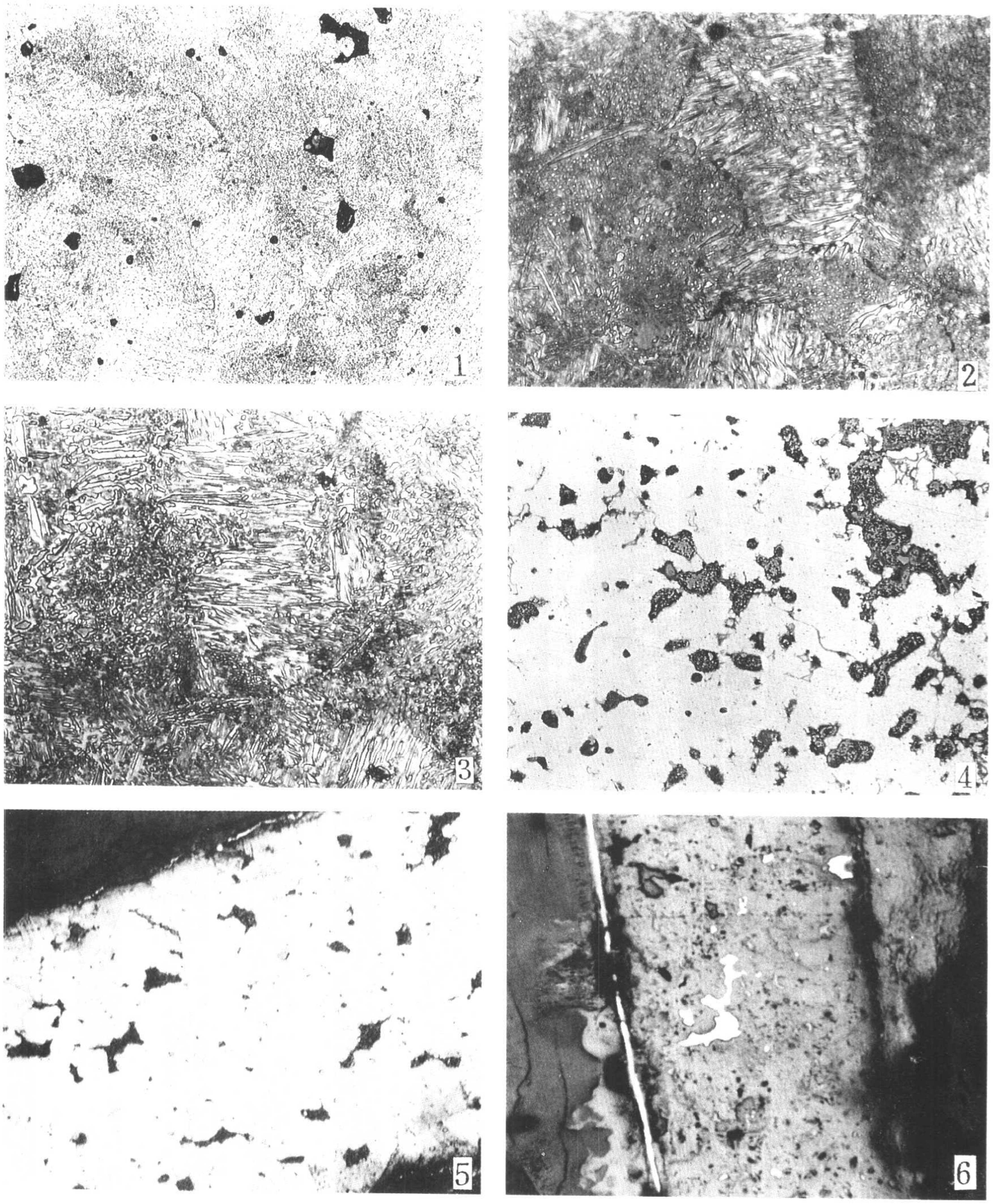
1. 铜盆(G77)金相组织　白色: α固溶体等轴晶粒，晶内存在滑移线; 灰色颗粒: 铜的硫化物夹杂。 ×200　2. 屏风铜构件(D19－11)金相组织　左侧白色线条为鎏金层 ×200　3. 屏风铜构件(D19－11)金相组织　基体为呈树枝状偏析的α固体溶体; 亮的多角形为(α＋δ)共析体; 灰色多角形为锈蚀了的(α＋δ)共析体，黑色枝状锈蚀为氧化亚铜。　4. 铜铒(C94)在显微镜正交偏光下观察的锈蚀产物　绿色: 孔雀石; 红色: 氧化亚铜; 橙色: 铜和锡的氧化物　5. 越式铜鼎(G61)金相组织 白色基体为α固溶体; 灰色为(α＋δ)共析体锈蚀; 斑纹多角状相为(α＋δ)共析体; 浅灰色花朵状为铜的硫化物。 ×200　6. 越式铜鼎(G61)金相组织　表面锈层为灰色; (α＋δ)共析体被锈蚀成深灰和黑色并沿枝晶向基体内伸展。



铜器鉴定

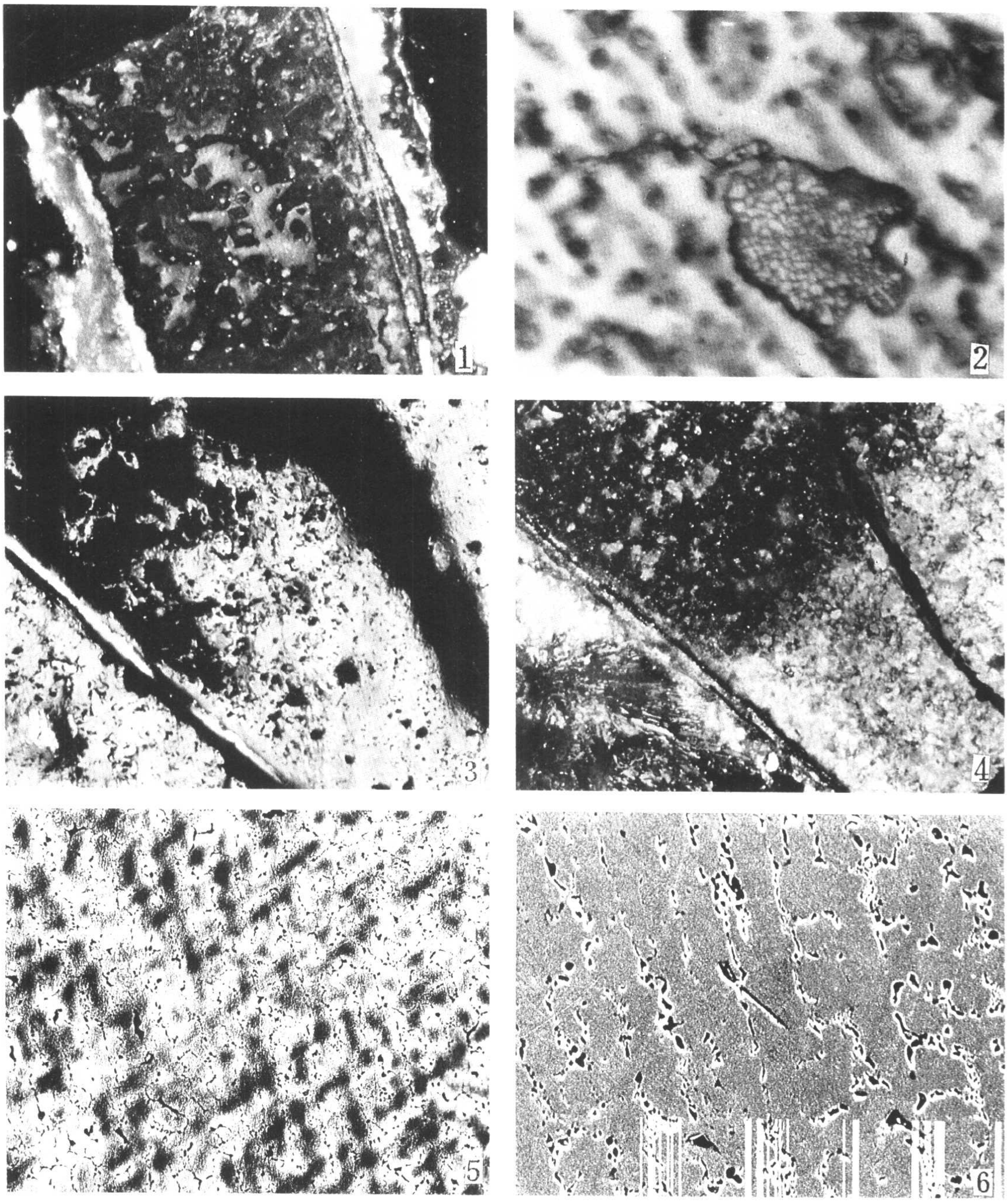
1. 越式铜鼎(G61)在扫描电镜中的二次电子像灰色基体为α固溶体。 2. 铜勺(C36－2)柄根部在显微镜正交偏光下观察的锈蚀 最外层绿色：孔雀石；红色：氧化亚铜；次外层橙色、黑色、绿色、红色为铜、锡氧化物混合锈蚀；心部白色基体为α固溶体，橙色为($\alpha+\delta$)共析体锈蚀，红色为α的锈蚀。 3. 铜勺(C 36－2)柄根部金相组织 白色基体为α固溶体；灰色树枝状为($\alpha+\delta$)共析体锈蚀；黑色为锈蚀孔洞 ×200 4. 铜勺(C36－2)勺体在显微镜正交偏光下所观察到的锈蚀产物 表面：绿色为孔雀石，红色为氧化亚铜；中心：白色为孔洞，红色与橙色为铜的氧化物与铜及锡的氧化物混合锈蚀。 5. 铜铺首(D100)金相组织 基体α固溶体，晶内偏折明显；黑色为孔洞及铅颗粒；蓝色为硫化物夹杂。样品上的滑形线由凿取样品所致。 6. 铜提筒(B59)金相组织 基体为α固溶体树枝晶；斑纹状多角形为($\alpha+\delta$)共析体；黑色为铅；铅上的灰色颗粒为铜的硫化物夹杂。 ×200

图版二一五(CCⅩⅤ)



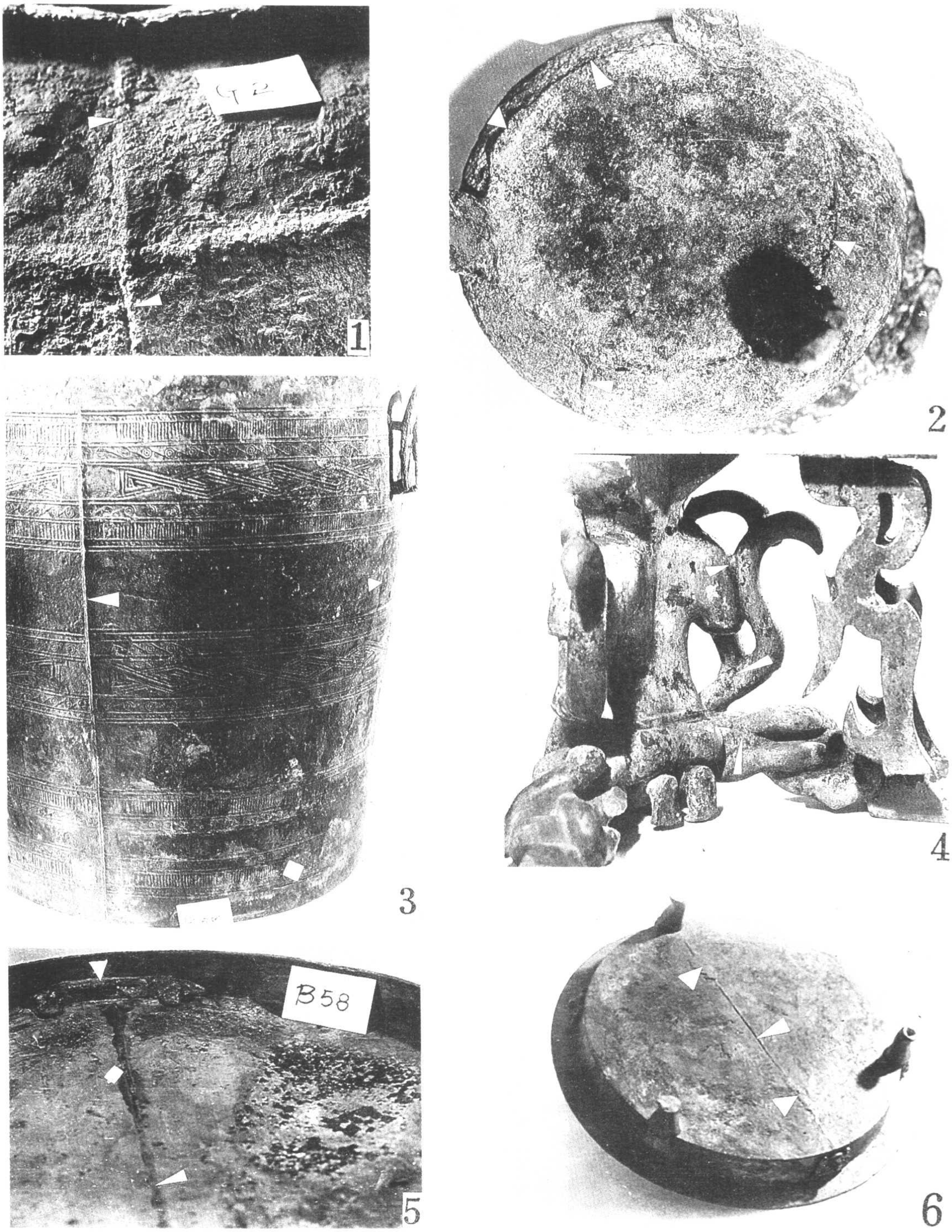
铜器鉴定

1. 铜镜(F42)金相组织　黑色为铸造缺陷；基体为($\alpha+\delta$)共析体；细针状相为α固溶体。　×200　　2. 铜镜(F42)金相组织　白色针片状相为α固溶体；基体为($\alpha+\delta$)共析体；黑色小颗粒为铅。　×800　　3. 铜镜(B13)金相组织　基体为($\alpha+\delta$)共析体；针片状相为α固溶体；黑色为铸造缺陷。　×800　　4. 熏炉(C172)金相组织　基体为α固溶体；黑色团块状相为铅；铅上的灰色颗粒为铜的硫化物夹杂；带斑纹的多角形相为($\alpha+\delta$)共析体。　×250　　5. 铜铜(C34)金相组织　基体为α固溶体再结晶晶粒及孪晶；黑色为铅，灰色小颗粒为铜的硫化物夹杂，白色亮的小颗粒为δ相。　　6. 铜管(C251－28)金相组织　样品一侧表面鎏金，厚约0.01毫米；中心部位残留少量金属呈白色。



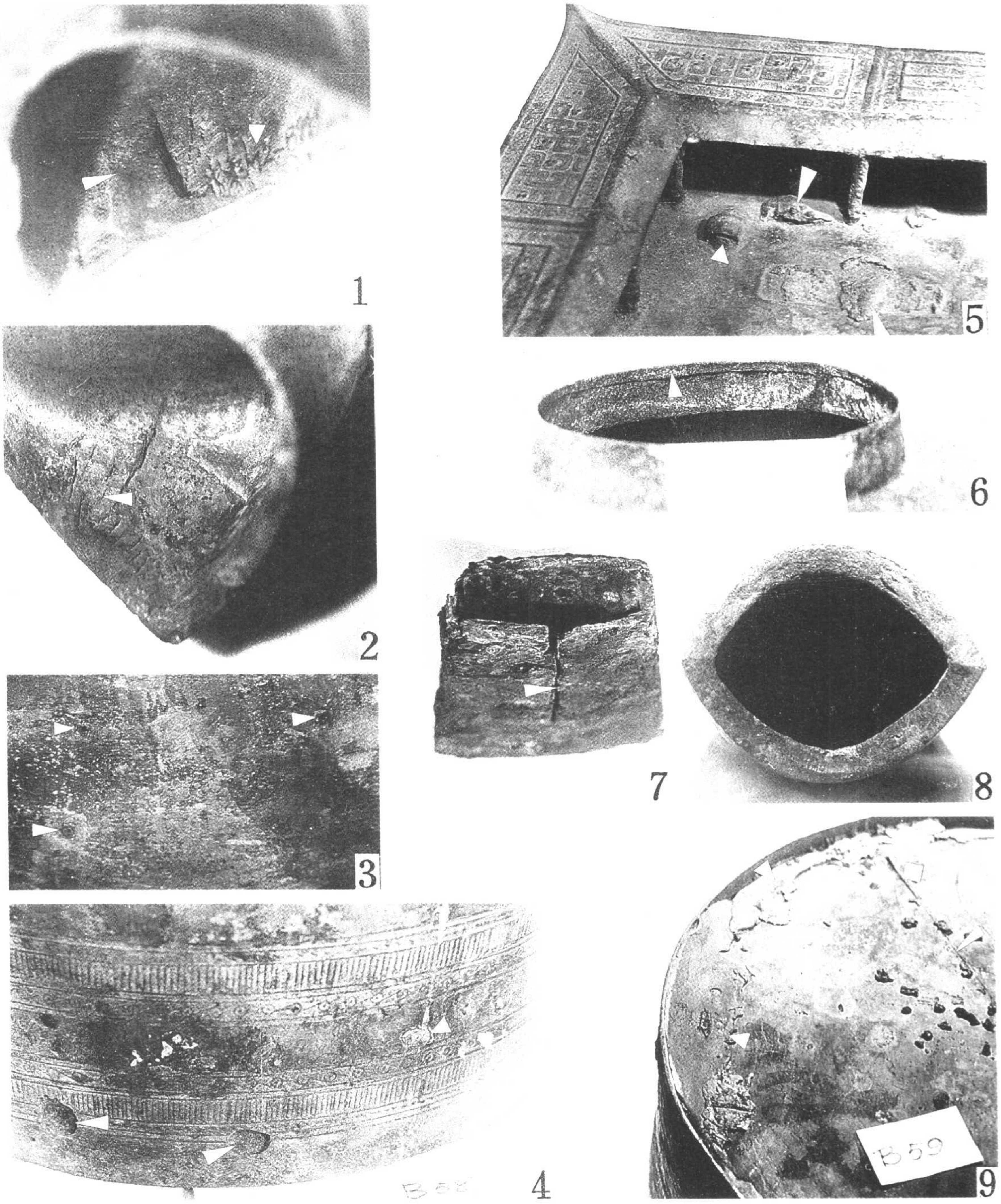
铜器鉴定

1. 铜管(C251－28)在显微镜正交偏光下观察到的锈蚀产物　外表面绿色锈蚀为孔雀石，红色为氧化亚铜；中心部位混合颜色为氧化亚铜、氧化铜、锡的氧化物；蓝铜矿等多种锈蚀产物。　2. 琴轸(B100)金相组织　基体为 α 固溶体，呈树枝状偏析；浅蓝色的带斑点的相对未被锈蚀的($\alpha+\delta$)共析体；黑灰色的为已被锈蚀了的($\alpha+\delta$)共析体；充填锈蚀坑的粉红色细小晶粒为锈蚀了的自由铜。　3. 铜匜(C78)金相组织　表面鎏金层厚约0.02毫米；样品全部锈蚀，部分疏松的锈蚀脱落，形成黑色孔洞及裂隙。　4. 铜匜(C78)在显微镜正交偎光下观察的锈蚀　外表面为孔雀石及氧化亚铜锈蚀；内部橙红色为锡的氧化物及铜的一价氧化物；黑色为铜的二价氧化物。　5. 银锭(C201)金相组织　基体为银的 α 固溶体，呈树枝状偏析；黑色点状相为银铜共晶体。×200　6. 银锭(C201)在扫描电镜中的二次电子像　其形貌与图版二一六·5相一致。×800



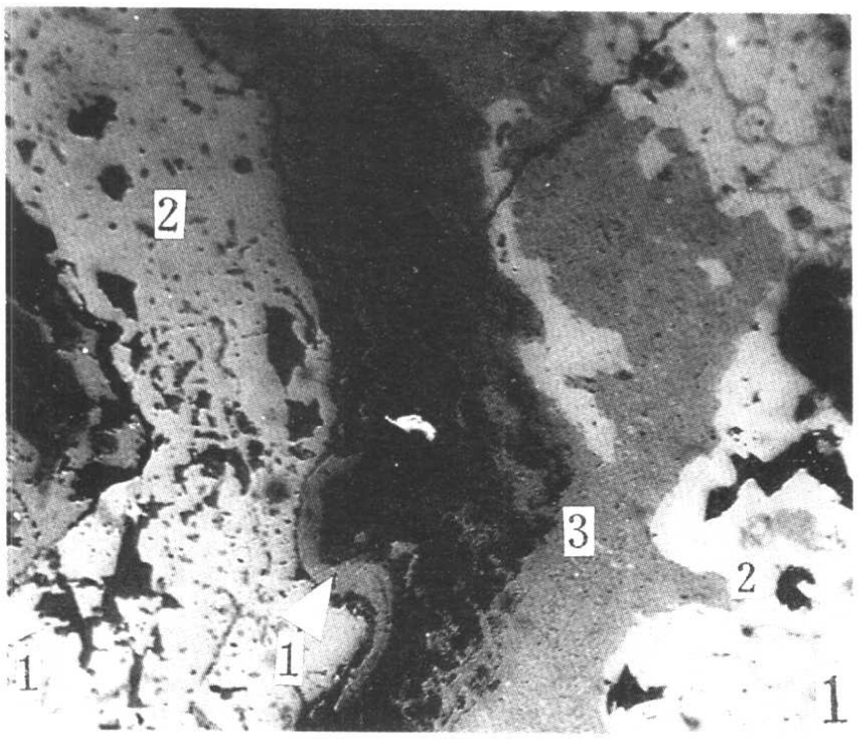
金属文物制造技术

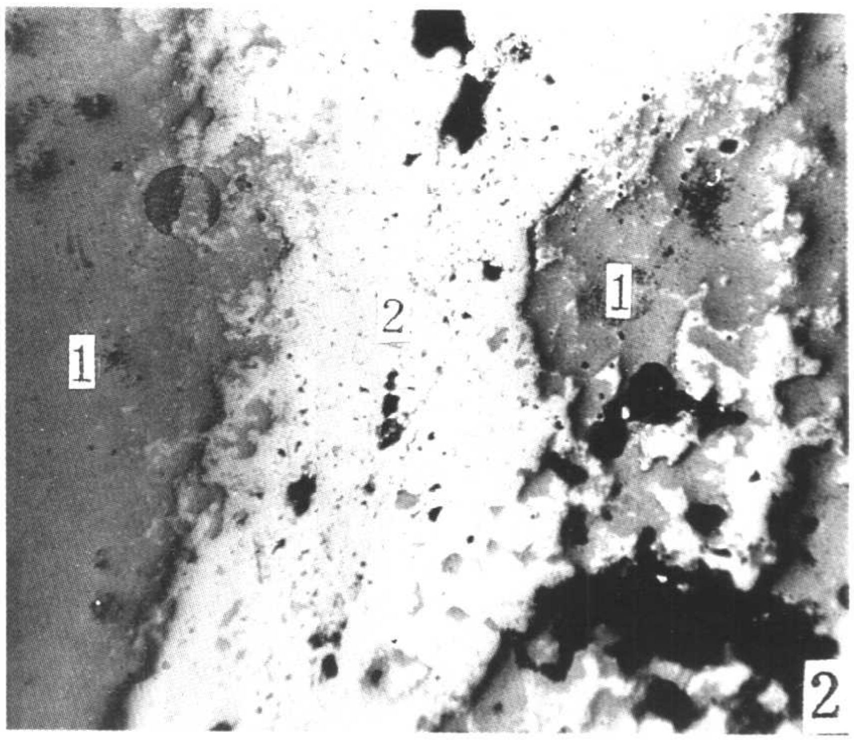
1. 铁鼎(G2)合范缝　2. 铜鼎(G36)底部合范缝　3. 铜提筒(B58)器身合范缝　4. 屏风铜构件(D19－11)蜡接部位　5. 铜提筒(B58)底部合范与浇口　6. 铜承盘(D102)底的合范与浇口

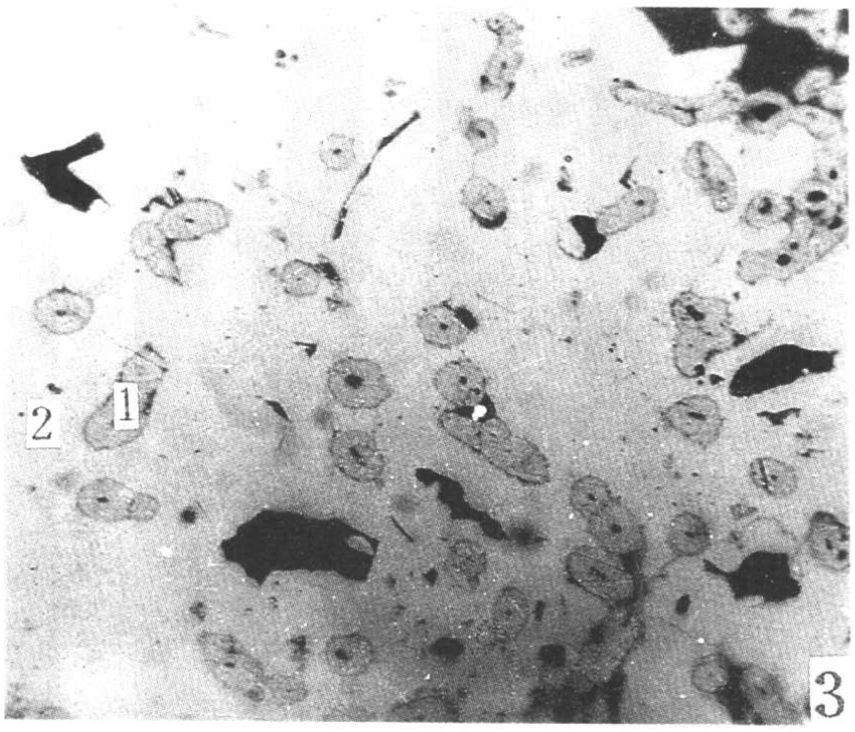


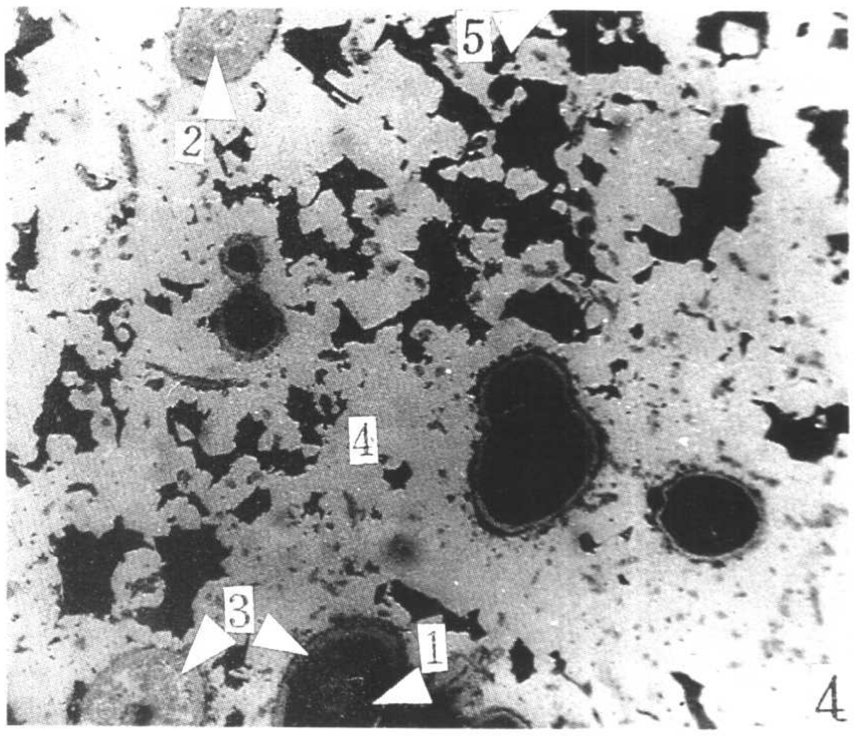
金属文物制造技术

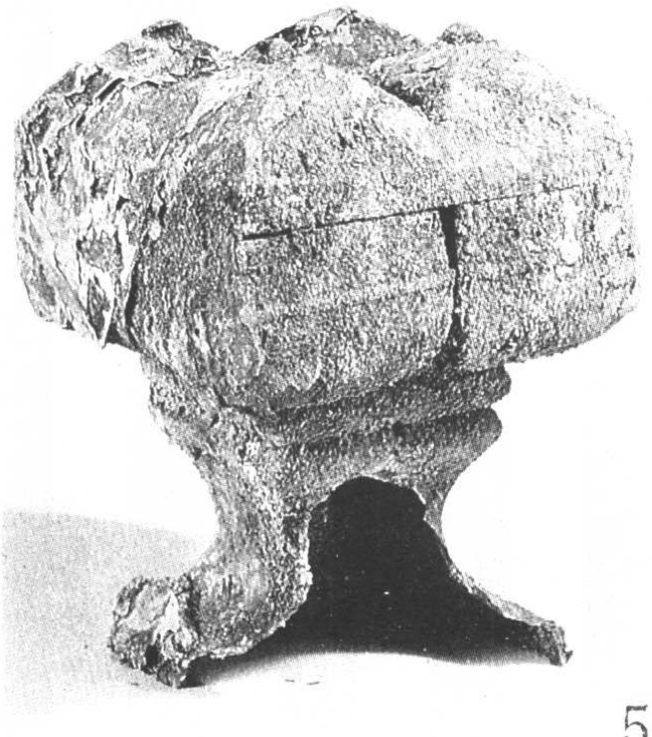
1. 铜编钟(B94)凿口痕迹的凹位　2. 凿口严重几乎连口沿都凿去　3. 铜提筒(B58)内壁活芯垫痕　4. 铜提筒(B58)近底部　5. 铜烤炉(G41)　6. 铜釜(G70)口沿卷边　7. 铁锛(C145－4)锻接缝　8. 铜编钟(B94)于部唇沿未凿过　9. 铜提筒(B59)底部补浇的浇口



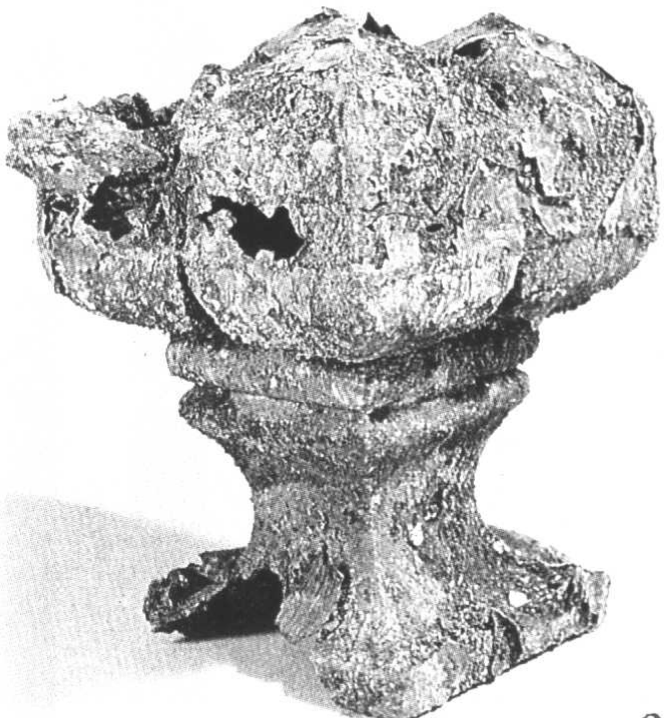








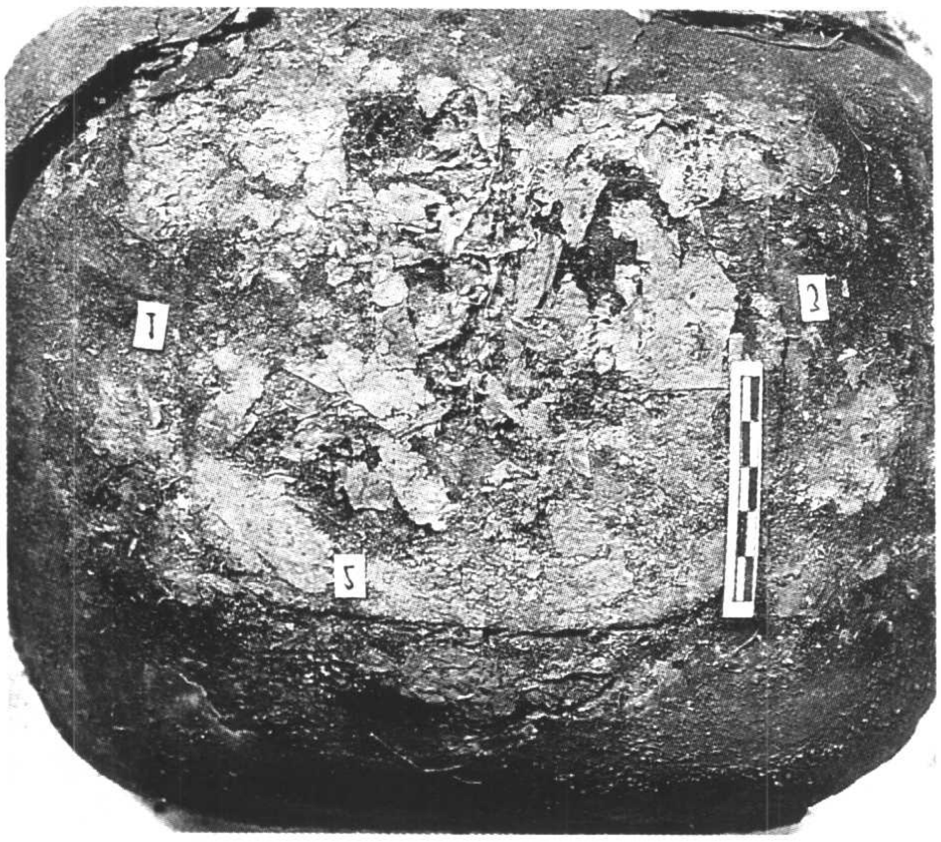
5



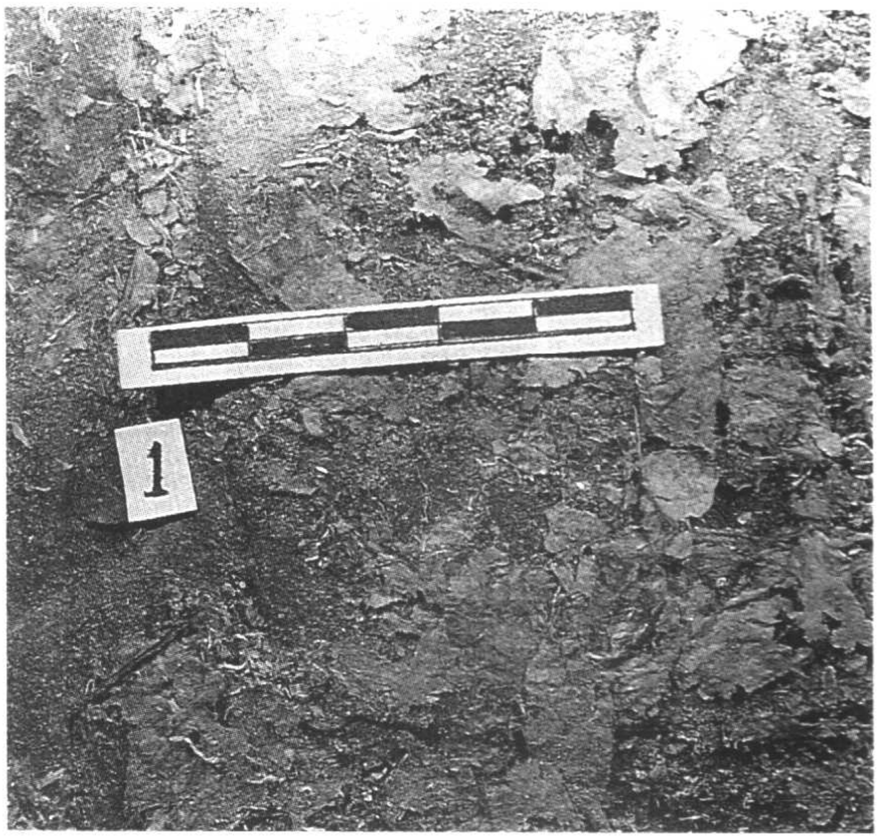
6

青铜器的腐蚀与保护

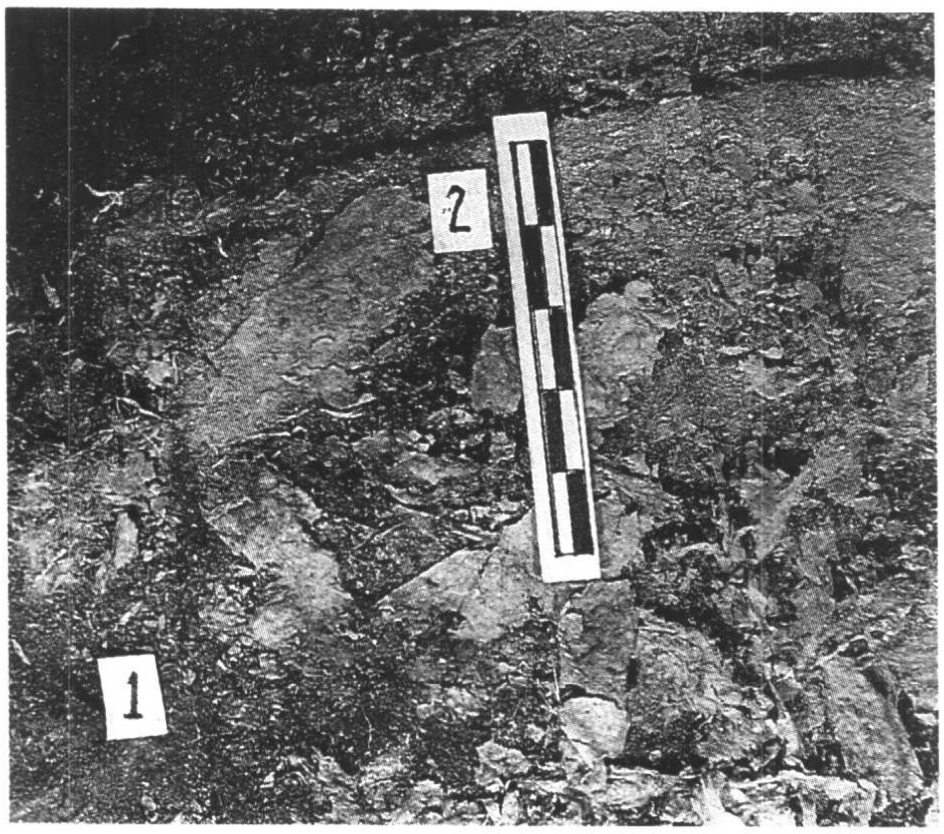
1～4. 提筒(B57)腐蚀产物的分析检测　5. 熏炉(C173)　6. 熏炉(C172)



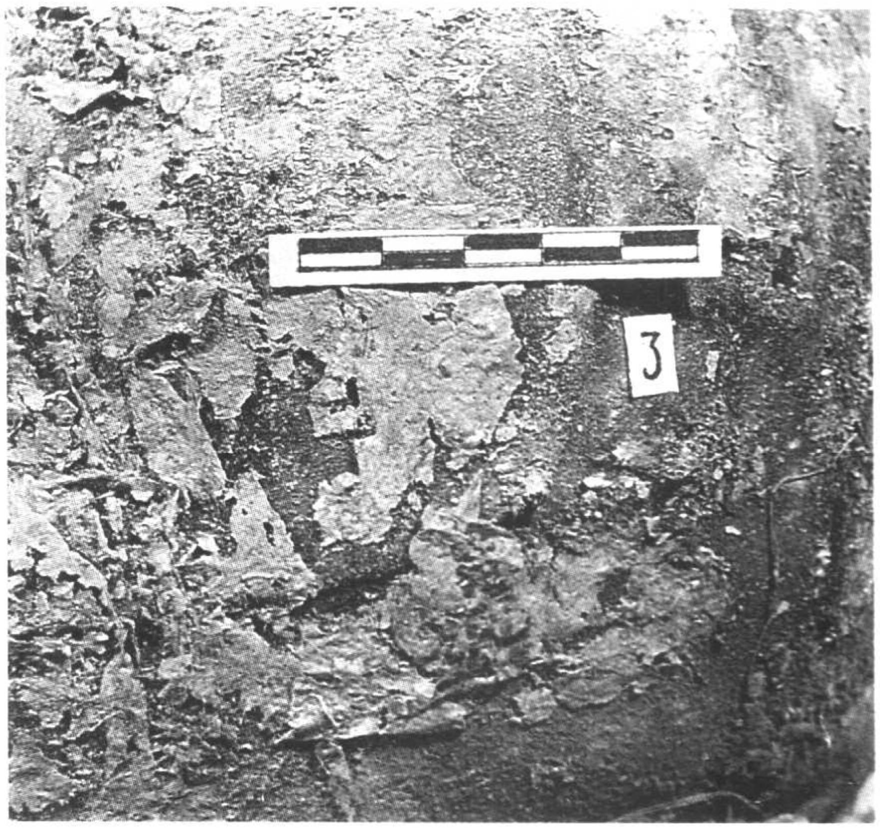
1. 两匝分开后露出纸状残片



2. 纸状残片(局部)

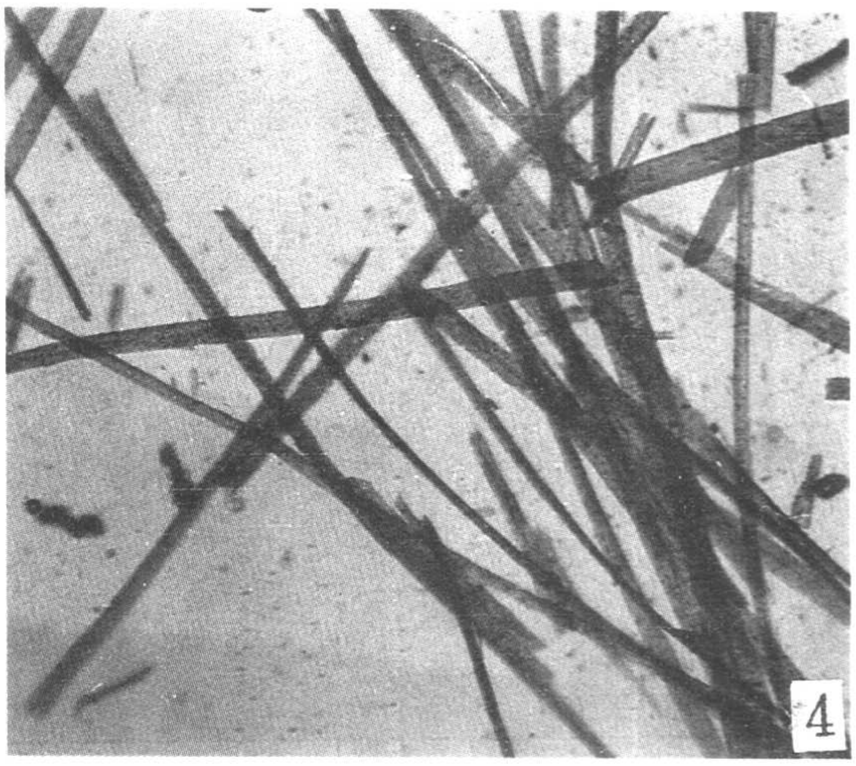


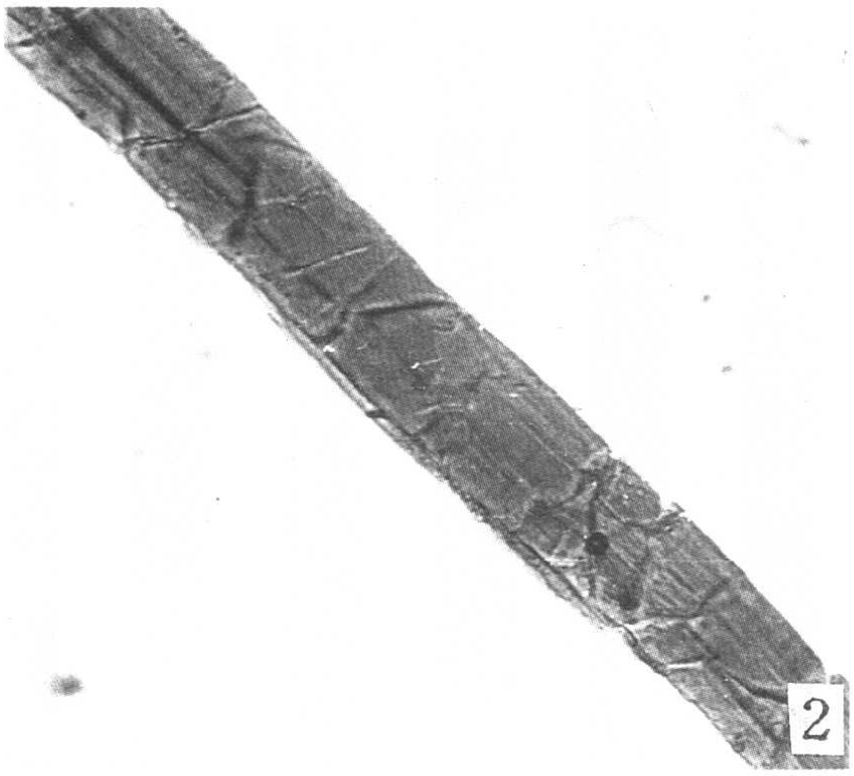
3. 纸状残片(局部)

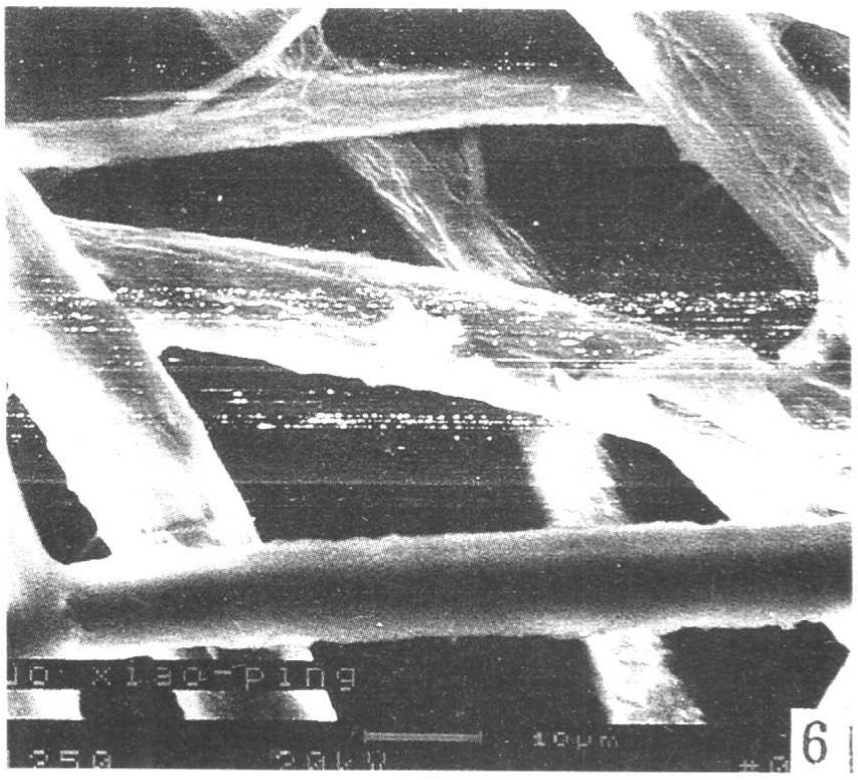


4. 纸状残片(局部)

纸状残片鉴定

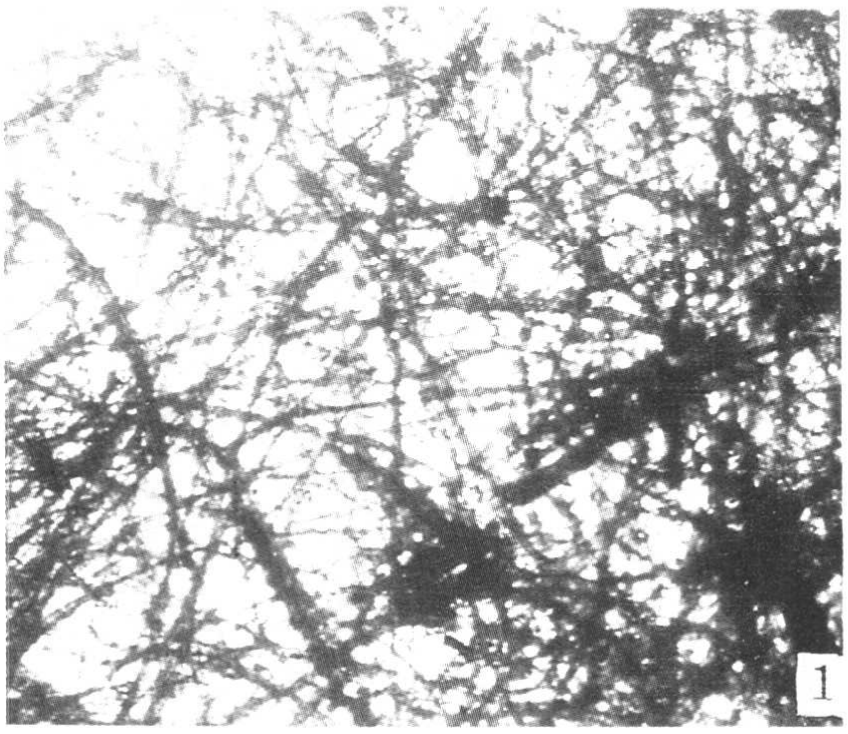


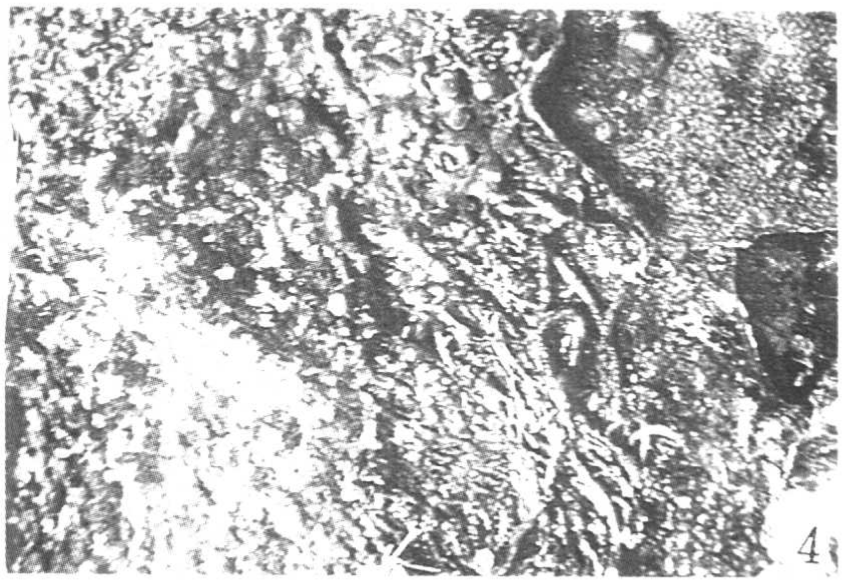


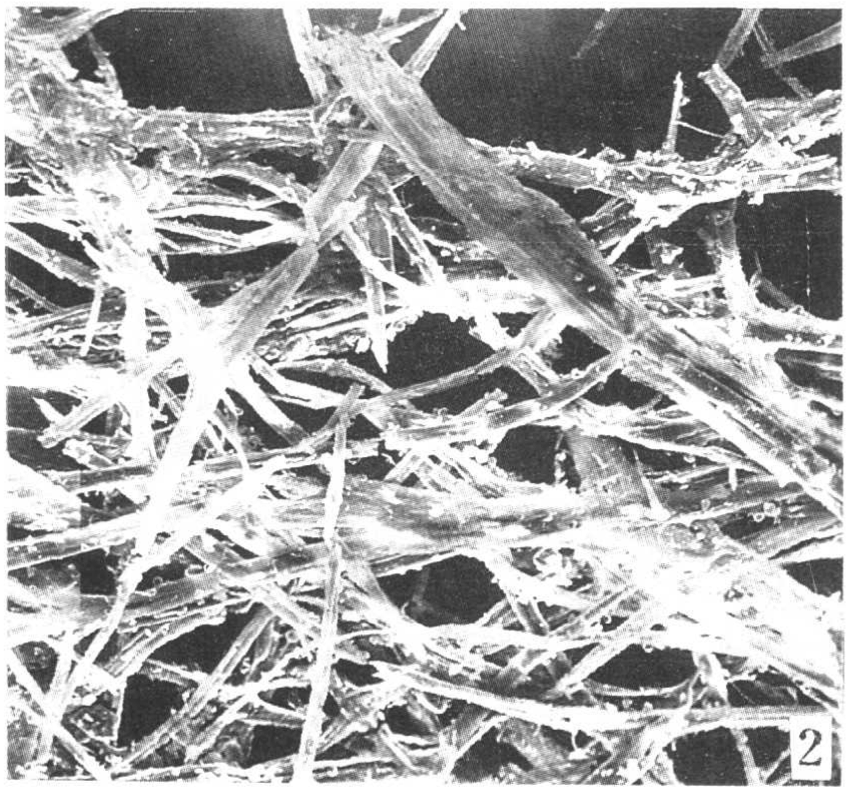


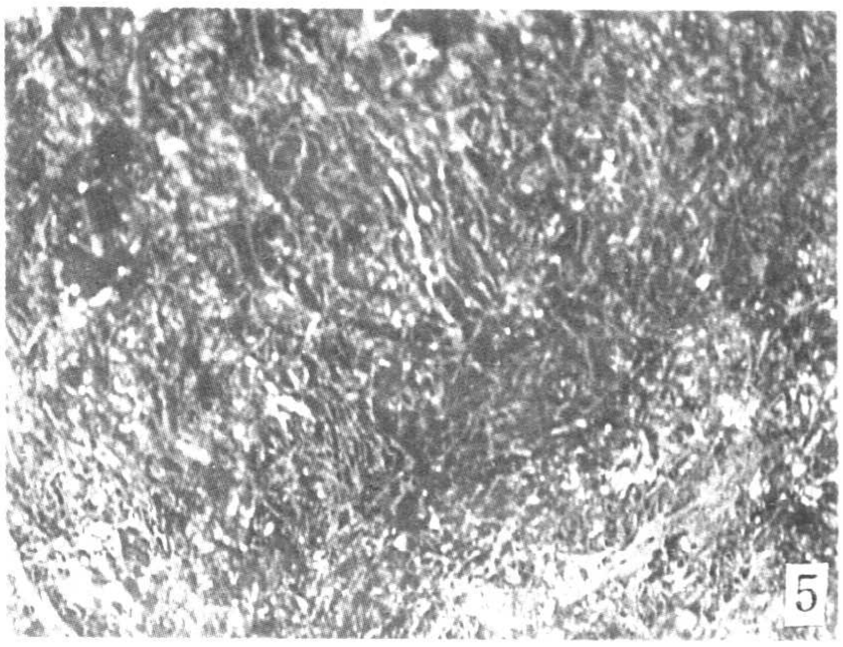
纸状残片鉴定

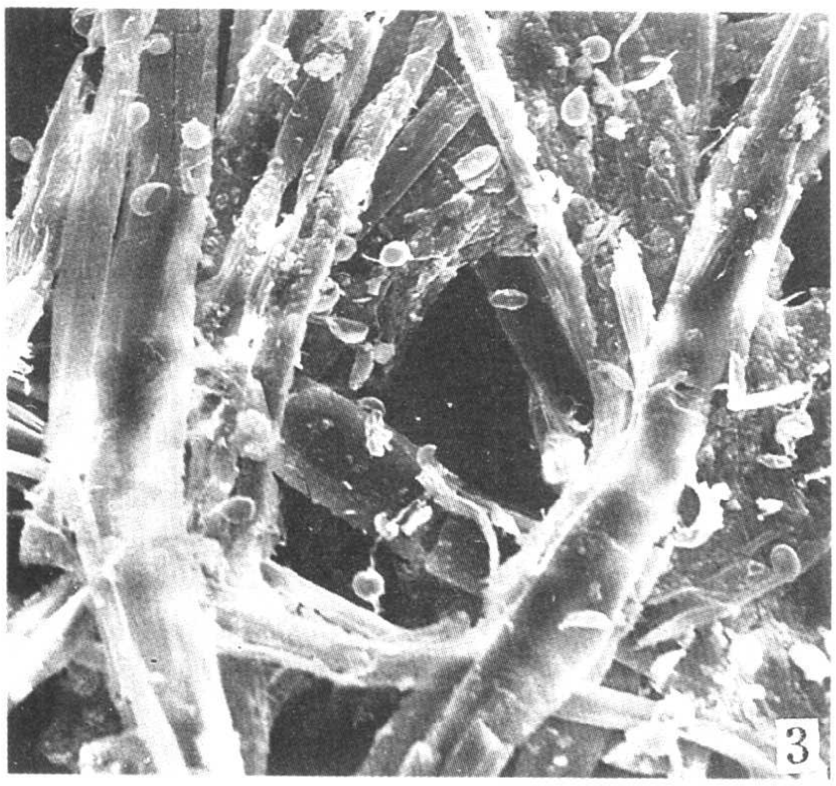
1. 纸状残片纤维 ×100　2. 纤维壁上有横节纹 ×290　3. 纤维端部 ×150　4. 第二次取样的残片纤维 ×80　5. 第二次取样的残片纤维 SEM×180　6. 第二次取样的残片纤维 SEM×620







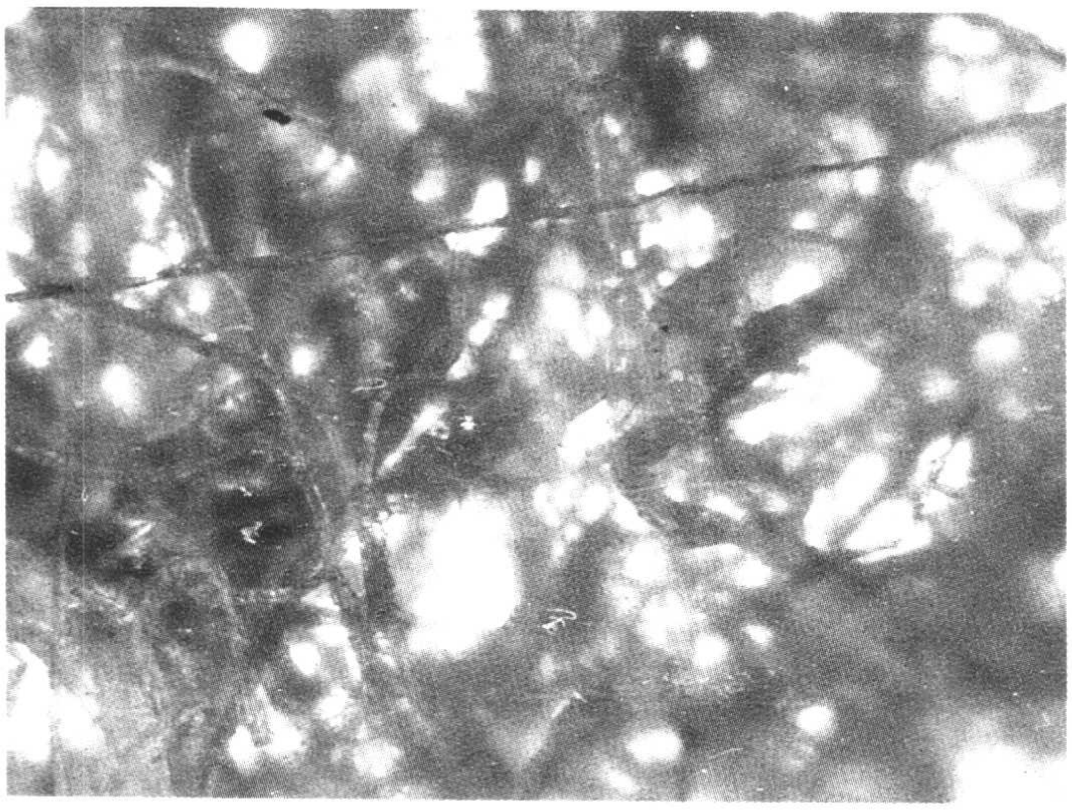




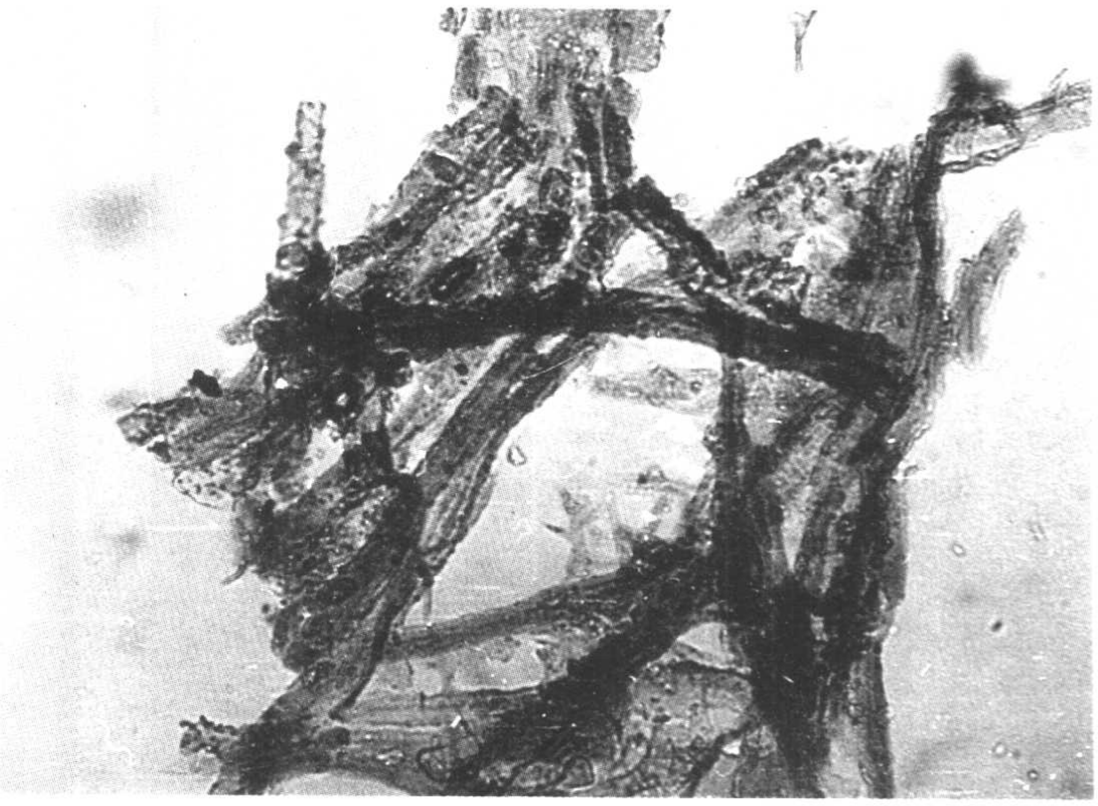
纸状残片鉴定

1. 纸状残片实物透光照 ×38　2. 纸状残片2号标本实物 SEM×150　3. 纸状残片2号标本实物，纤维附着粒状物及糊状物 SEM×750　4. 铜镜上残附的绢及麻絮 ×3　5. 铜镜上残附麻絮 ×3　6. 铜镜及其附着物 ×0.2　7. 铜镜附着的麻布残片 ×3

1. 象岗纸纤维物理结构 ×150



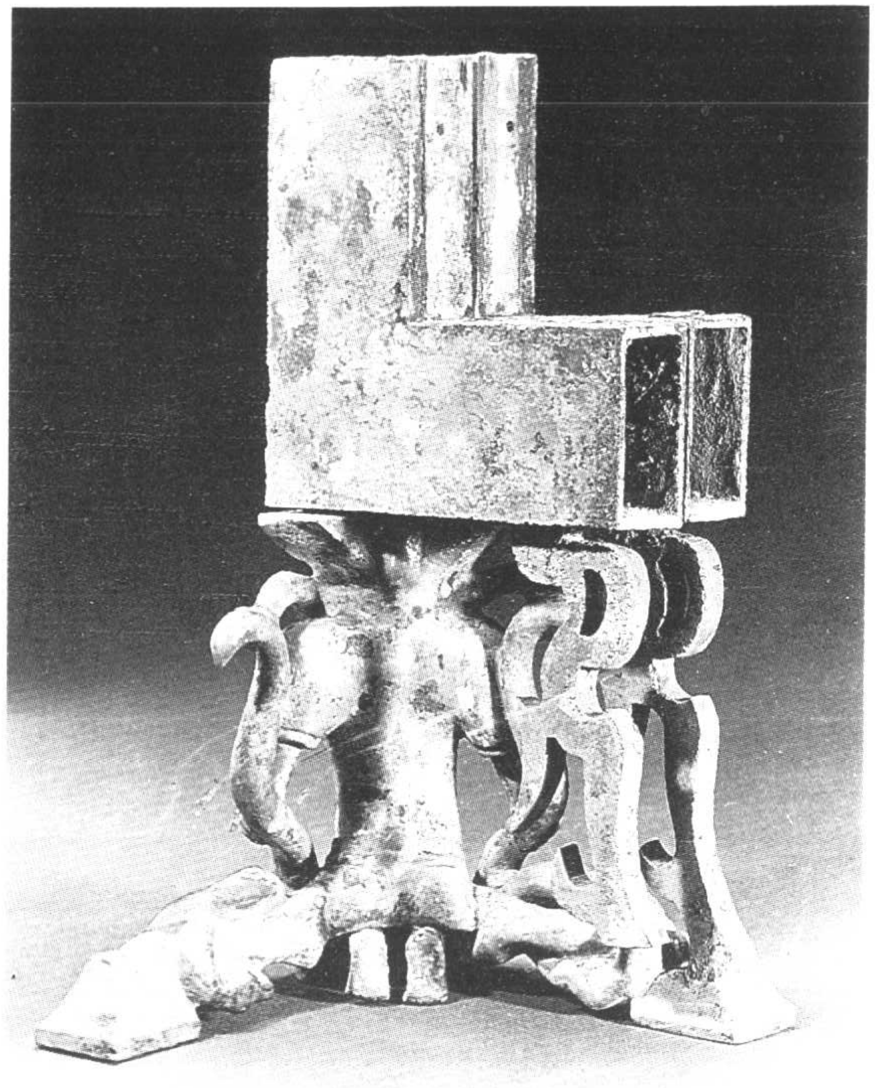
2. 新疆出土升平十年麻纸纤维物理结构 ×150



3. 显微分析后的象岗纸纤维 ×150

象岗纸鉴定

1. 力士座局部



2. 力士座背面

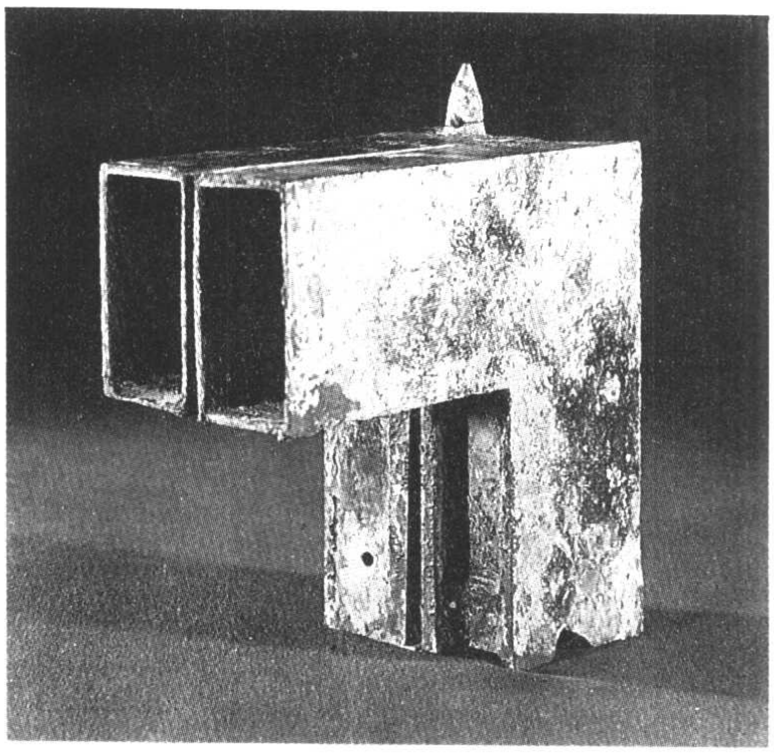
3. 力士跣足

屏风左下角折叠构件(D19—11)

1. 力士手上漆绘手镯

2. 座下缠蛇漆绘项圈

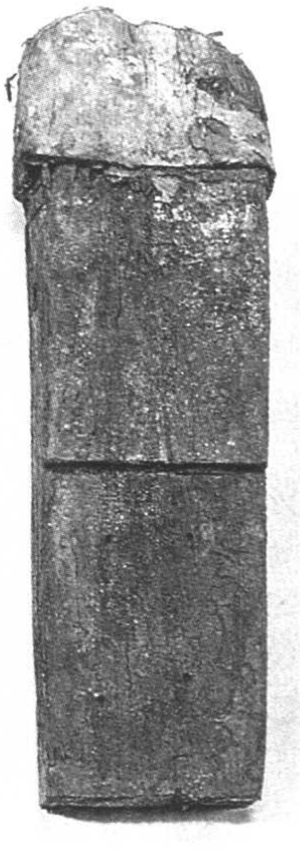
屏风右下角折叠构件(D19－2)



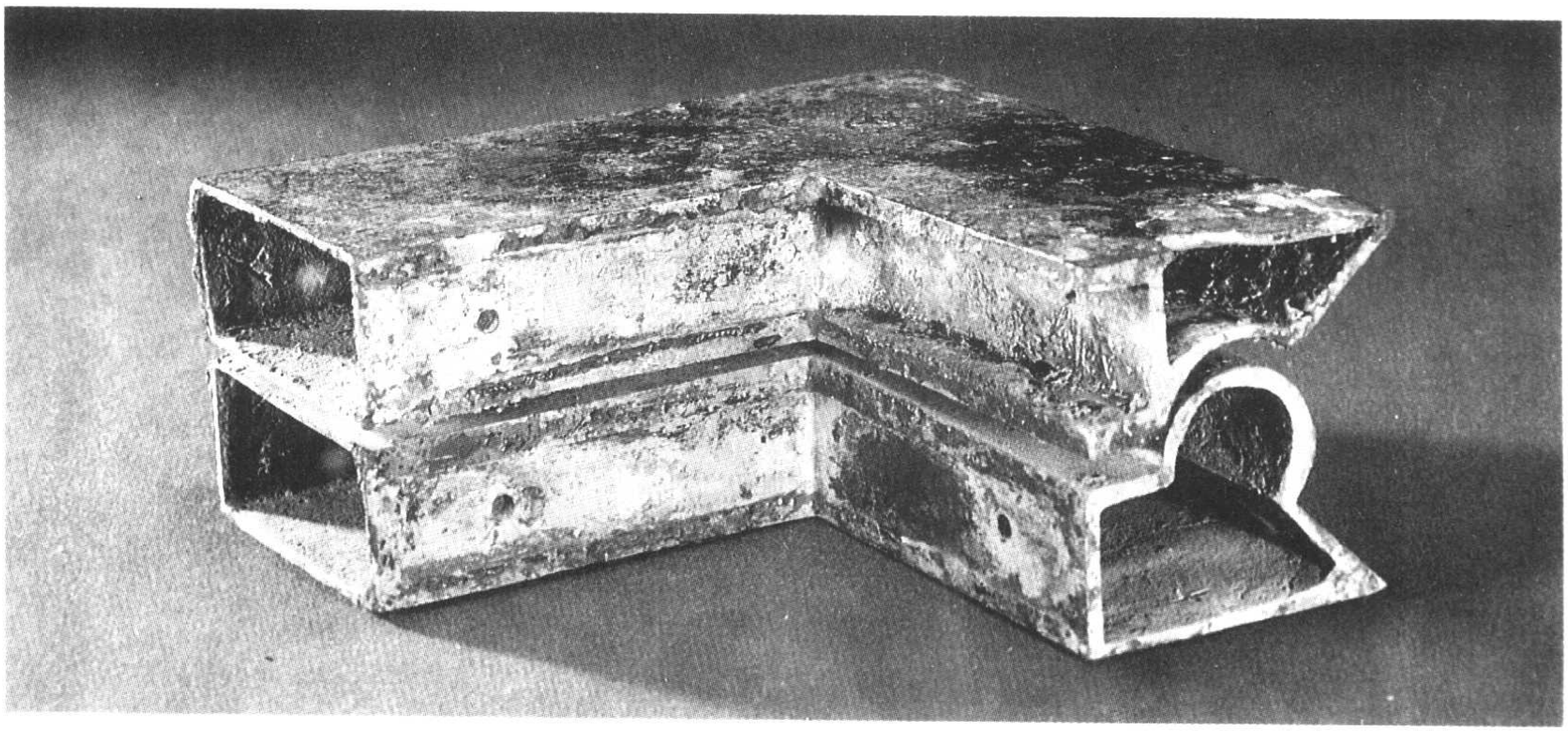
1. 正视

2. 侧视

4. 銎内木枋



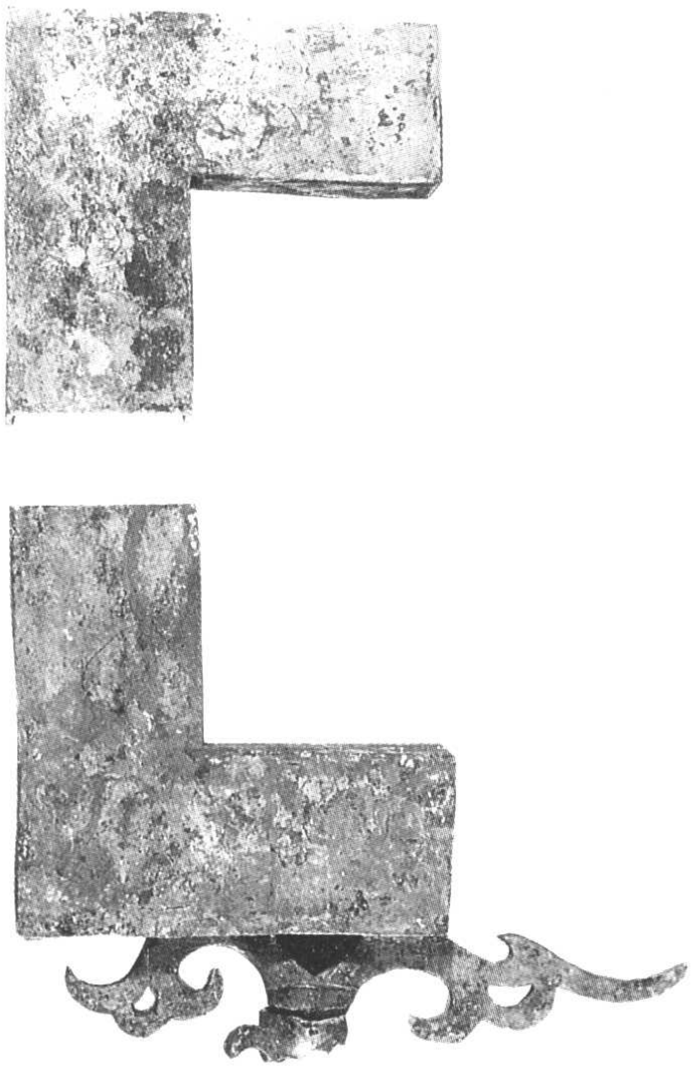
5. 銎内木枋



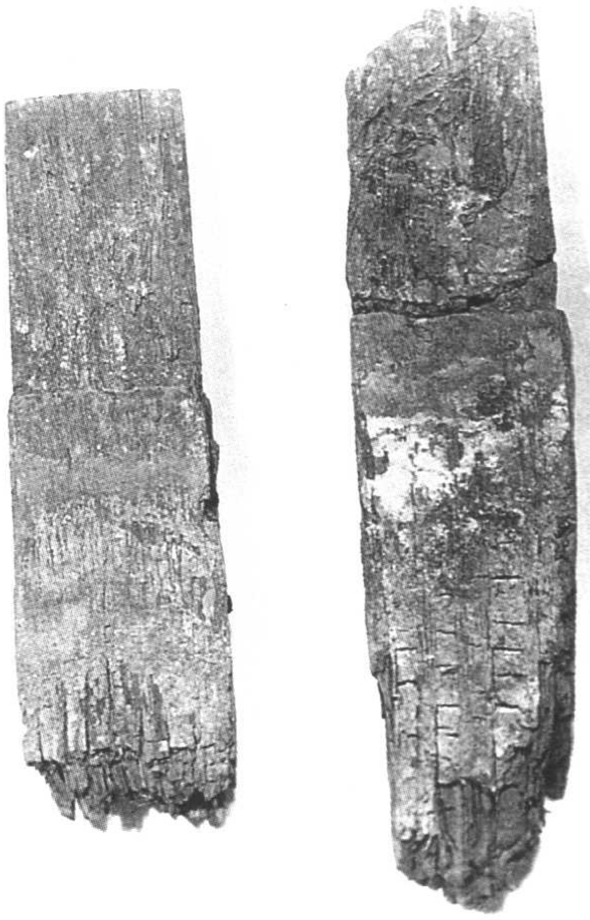
3. 俯视

屏风左上角折叠构件(D19—10)

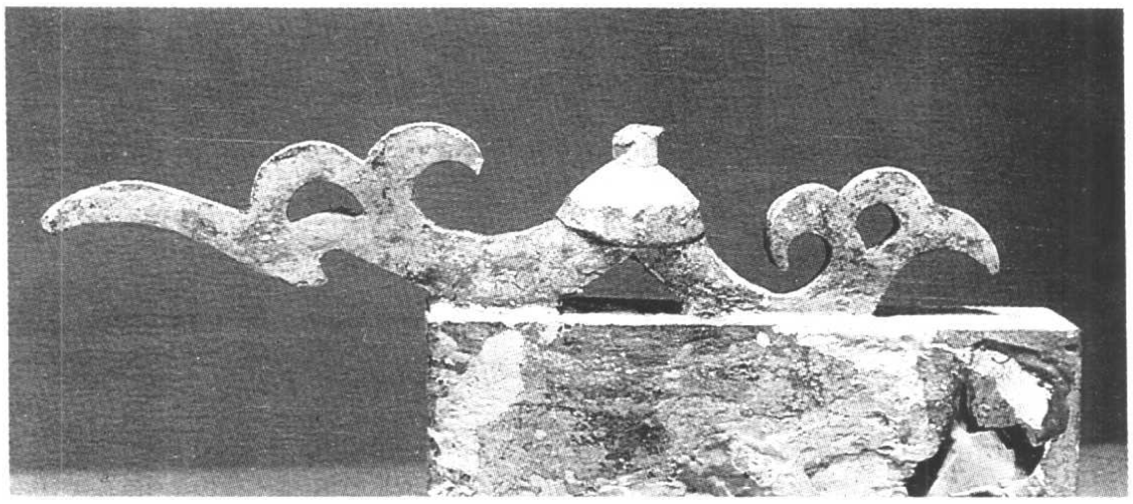
图版二二七(CCXXVII)



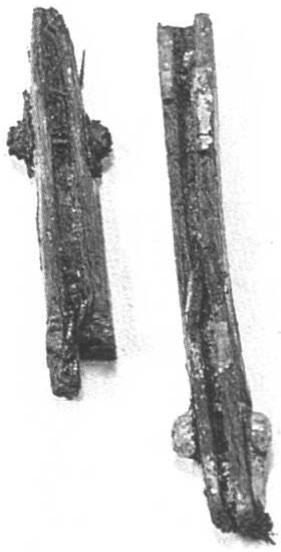
1. 上、下包角(D19－6)



4. 枋木



2. 套接于下包角的圆箍已砍掉(D19－4)

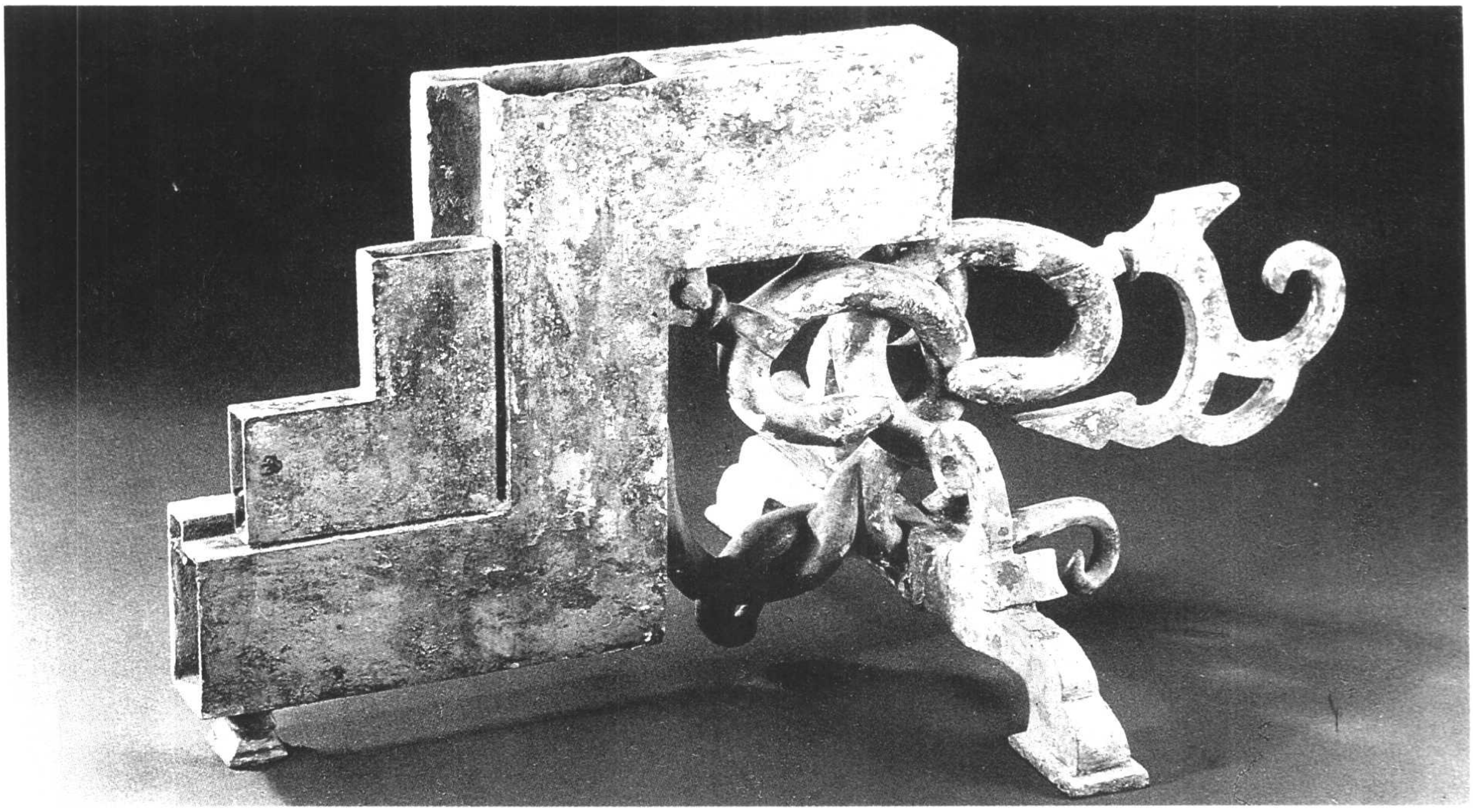


5. 边框木条

3. 套接于下包角的圆箍仍连着(D19－6)

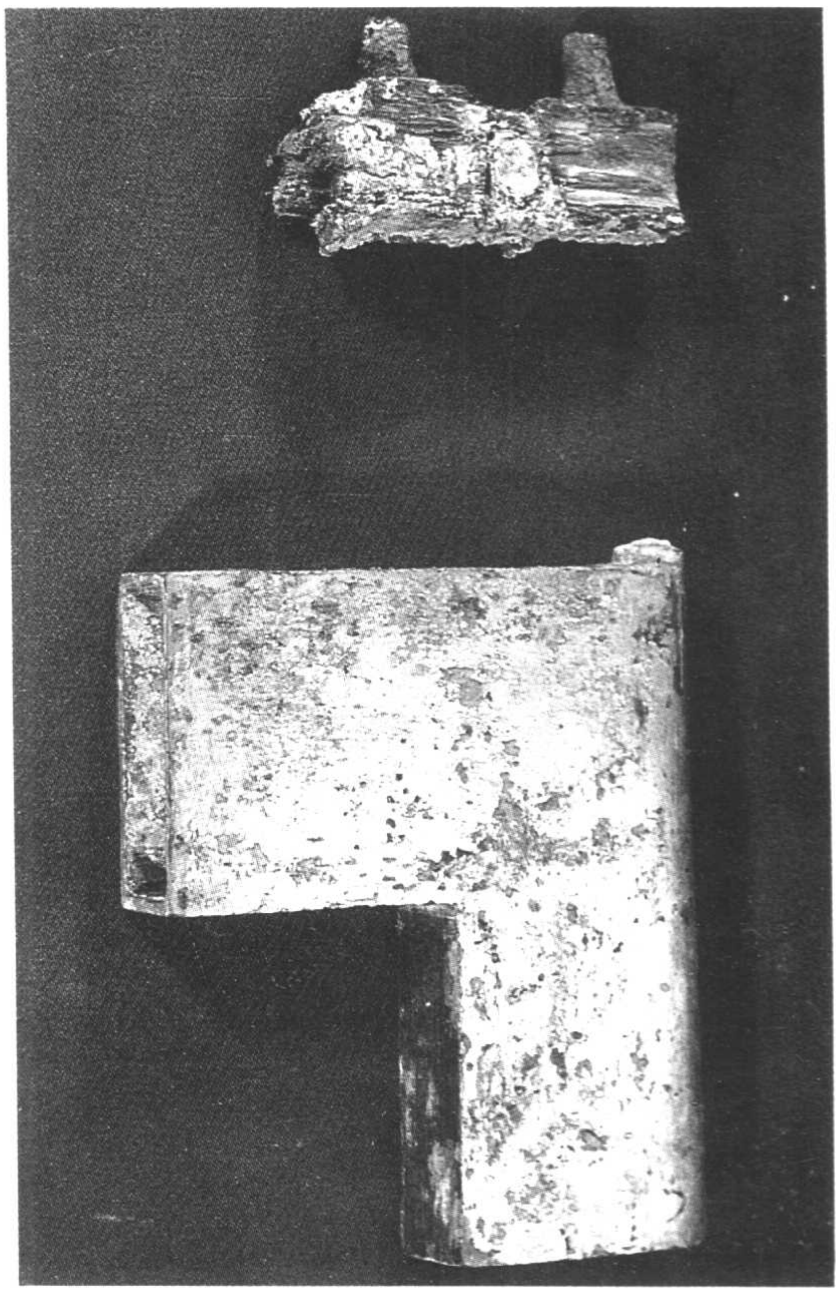
6. 边框木条

屏风右翼障上下包角构件



1. 左托座(D19－5)

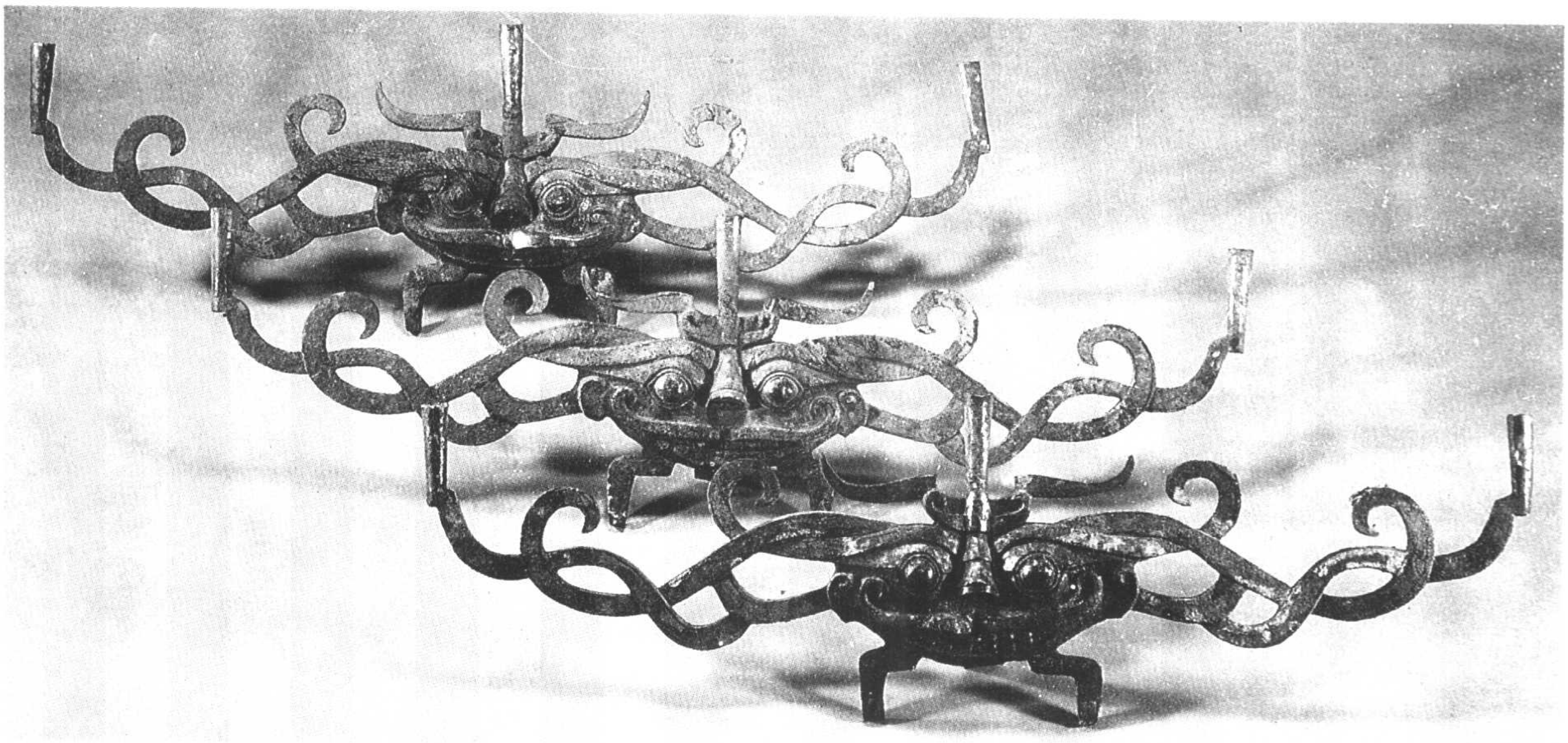
2. 被砍下的托座斜撑



3. 上门轴包角、门斗(D19－8)

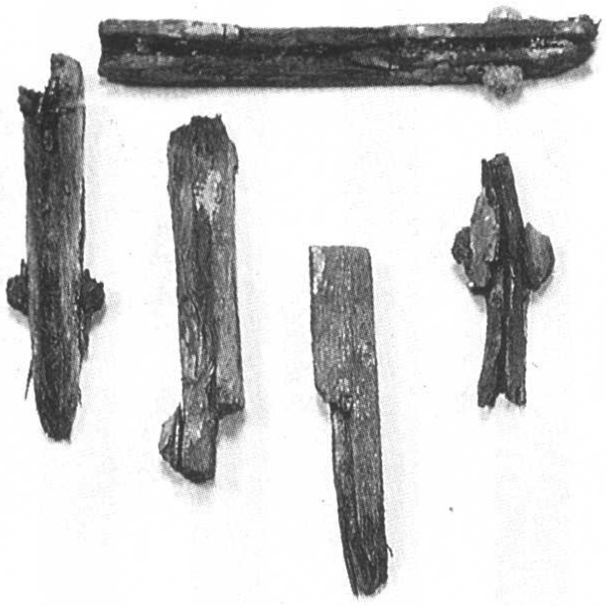
4. 门轴包角内的木板

屏风左托座构件和门轴包角

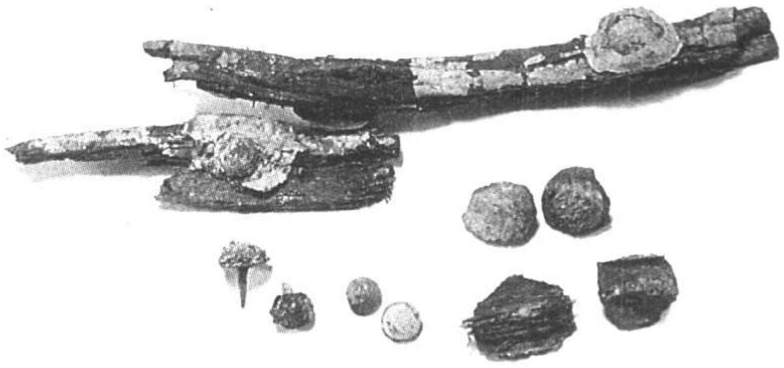


1. 双面兽首顶饰(D162)

2. 双面兽首顶饰

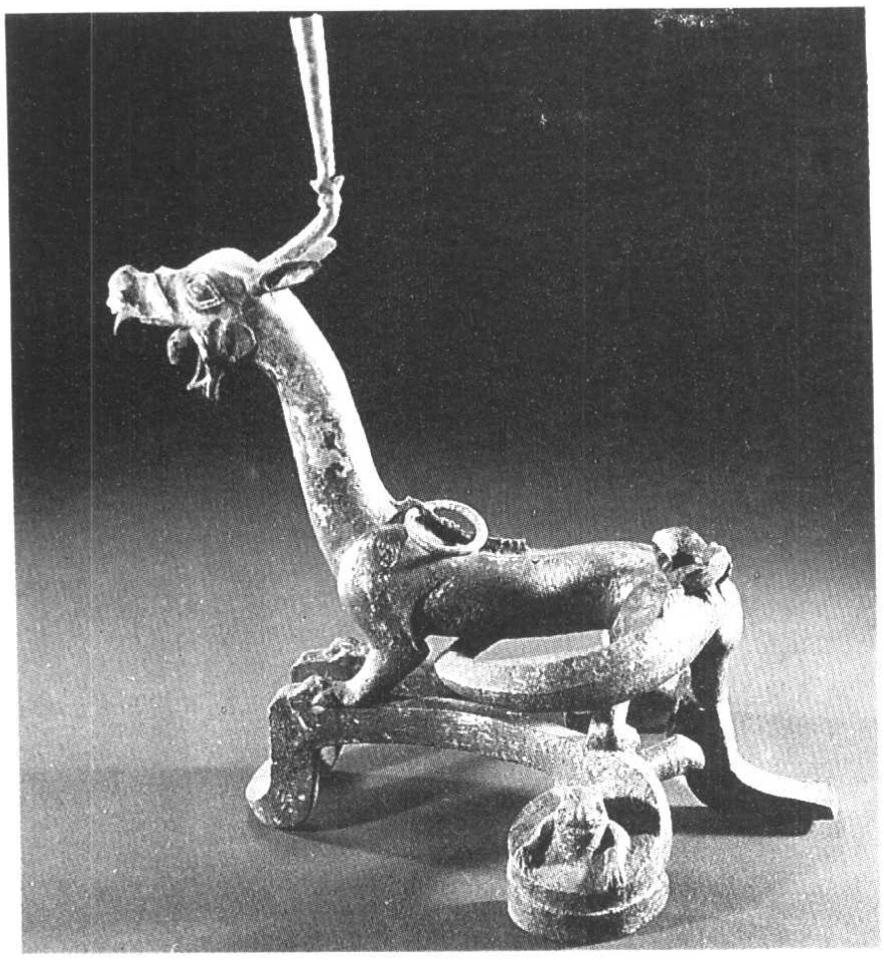


3. 边框木条及泡钉(D19-9)



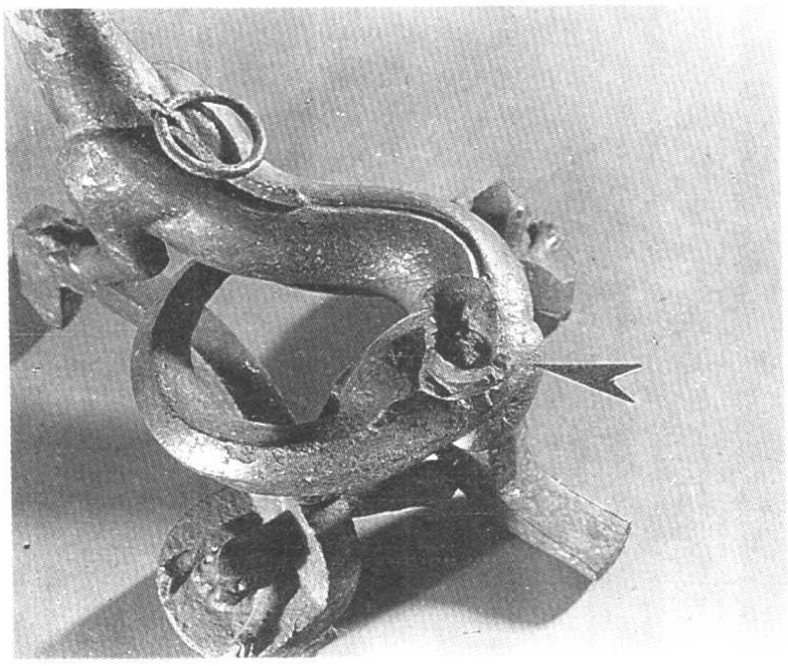
4. 边框木条及泡钉(D19-9)

屏风饰件



1.蟠龙托座(D106－1)

2.龙口内青蛙



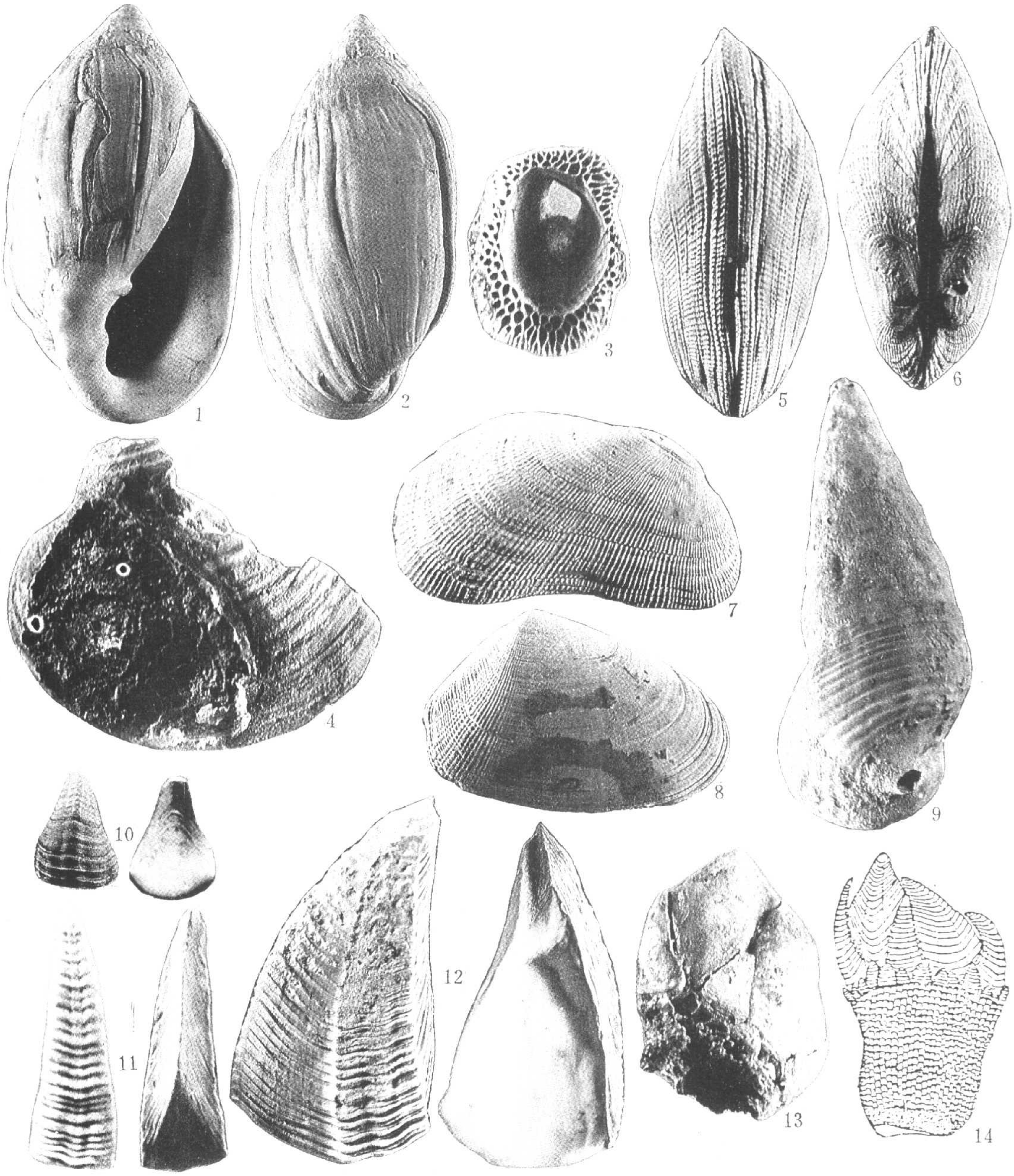
3.龙脊鳍处连接圆箍砍凿痕(D106－1)

4.砍凿痕(D106－1)

5.砍凿痕(D106－2)

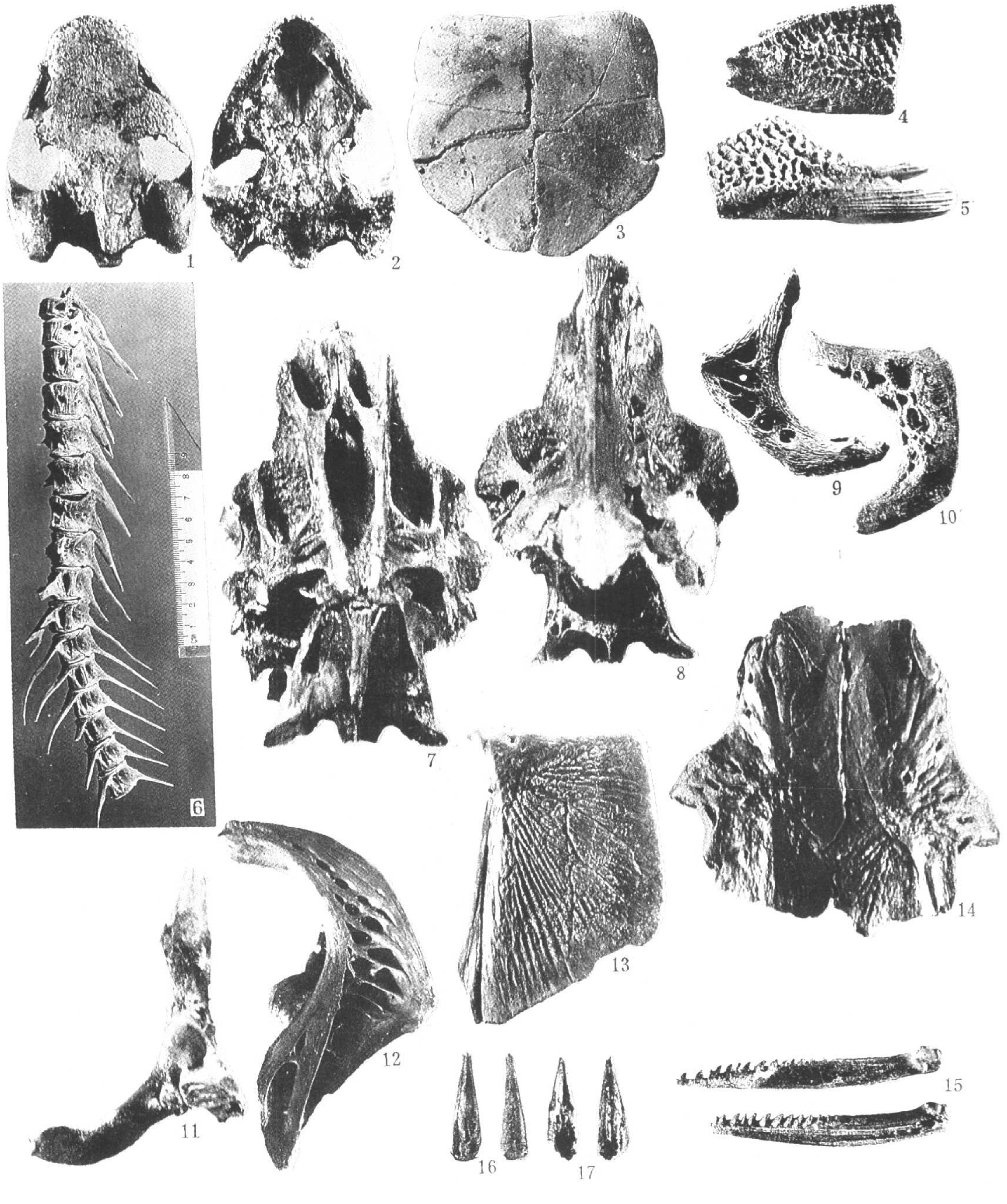
屏风托座

图版二三一(CCⅩⅩⅩⅠ)



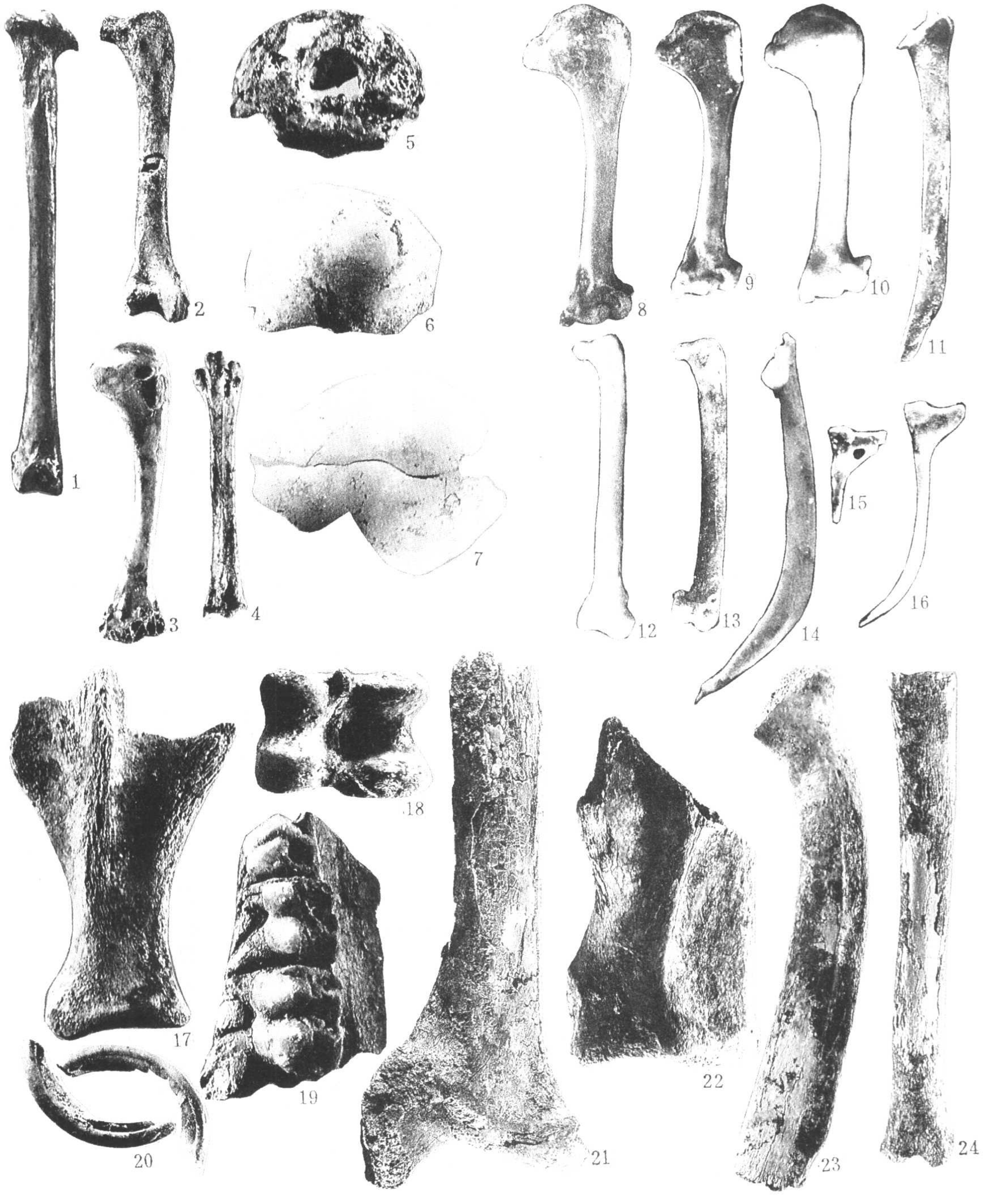
动物遗骸鉴定

耳状耳螺: 1. 口面观　2. 背面观(81mm)*　括号内为物体长度, 下同。　笠藤壶: 3. 底面观(18mm)　河蚬: 4. 背面观(3mm)　青蚶: 5～7背面、腹面观(50mm)　楔形斧蛤: 8. 外面观(26mm)　沟纹笋光螺: 9. 背面观(70mm)　龟足: 10. 吻板背腹面(10mm)　11. 峰板背腹面(24mm)　12. 盾板背腹面(33mm)　13. 完整头状部(25mm)　14. 现生完整个体(头状部和柄部)



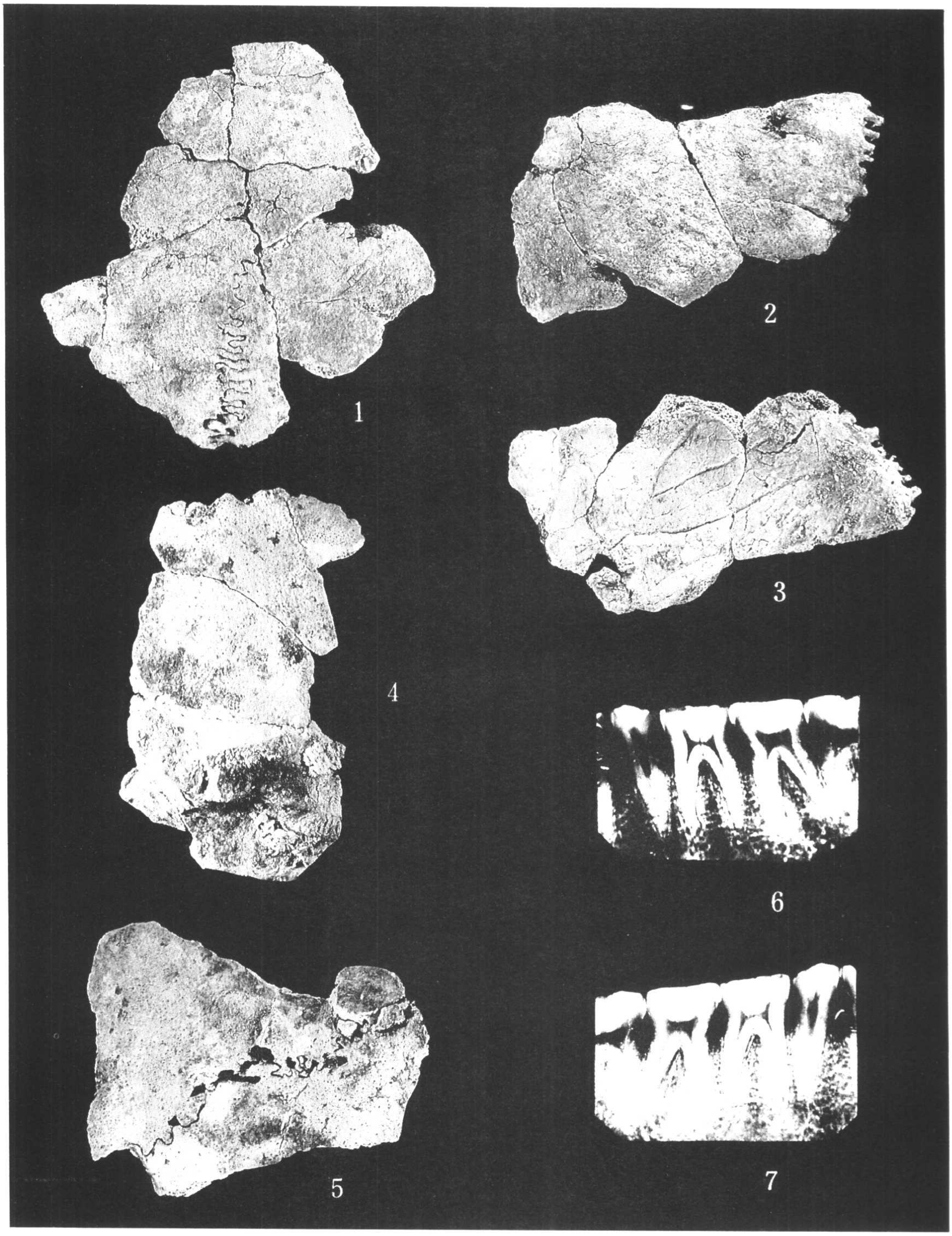
动物遗骸鉴定

花龟：1、2. 头骨(33mm) 3. 腹甲后半部(33mm) 中华鳖(水鱼)：4、5. 背甲甲片(46mm) 大黄鱼：6. 脊椎骨 7、8. 残头骨腭面(43mm) 广东鲂：9、10. 左下咽骨(26mm) 鲤鱼：11、12. 左下咽骨齿面(47mm) 13. 鳃盖骨(40mm) 14. 头骨(37mm) 15. 背鳍第三硬棘(35mm) 真虾：16. 现生腹部末节 17. 出土真虾腹部末节



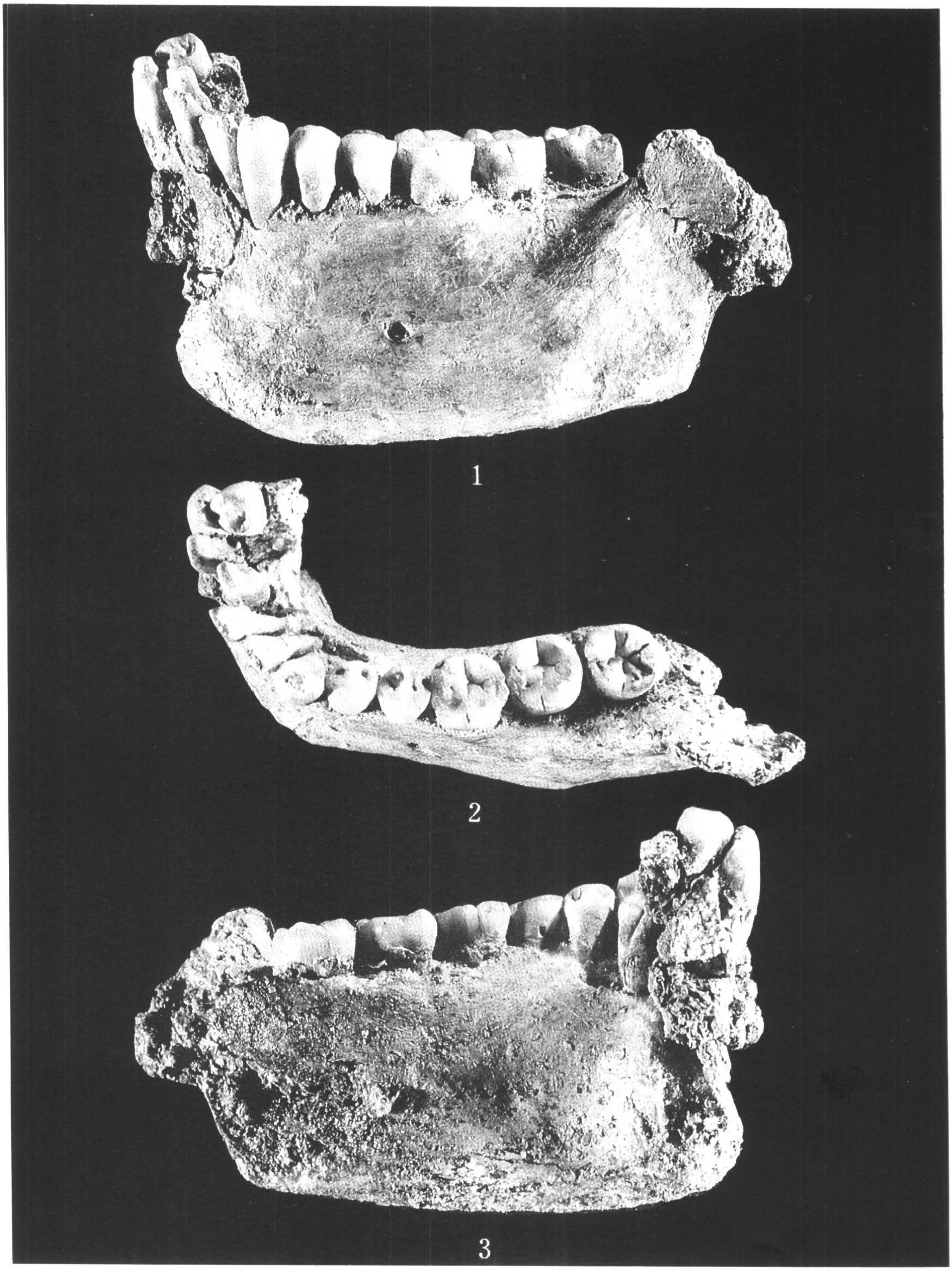
动物遗骸鉴定

家鸡: 1. 右股骨(107mm) 2. 左股骨(67mm) 3. 左肱骨(60mm) 4. 跗蹠骨(54mm) 5. 头骨(23mm) 6、7. 鸡蛋壳残片(33mm) 黄胸鹀(禾花雀): 8. 现生雀肱骨(17mm) 9. 出土的肱骨(18mm) 10. 现生麻雀肱骨(17mm) 11. 肩胛骨(18mm) 12. 股骨(17mm) 13. 现生的股骨(17.3mm) 14. 现生的肩胛骨(20mm) 15. 叉骨(残6mm) 16. 现生的叉骨(14.3mm) 家猪: 17. 肩胛骨 18. 距骨 19. 左上颌骨 竹鼠: 20. 左、右上门齿(27mm) 黄牛: 21. 左股骨近端(340mm) 22. 肩胛骨颈端(640mm) 山羊: 23、24. 左胫骨(206mm)



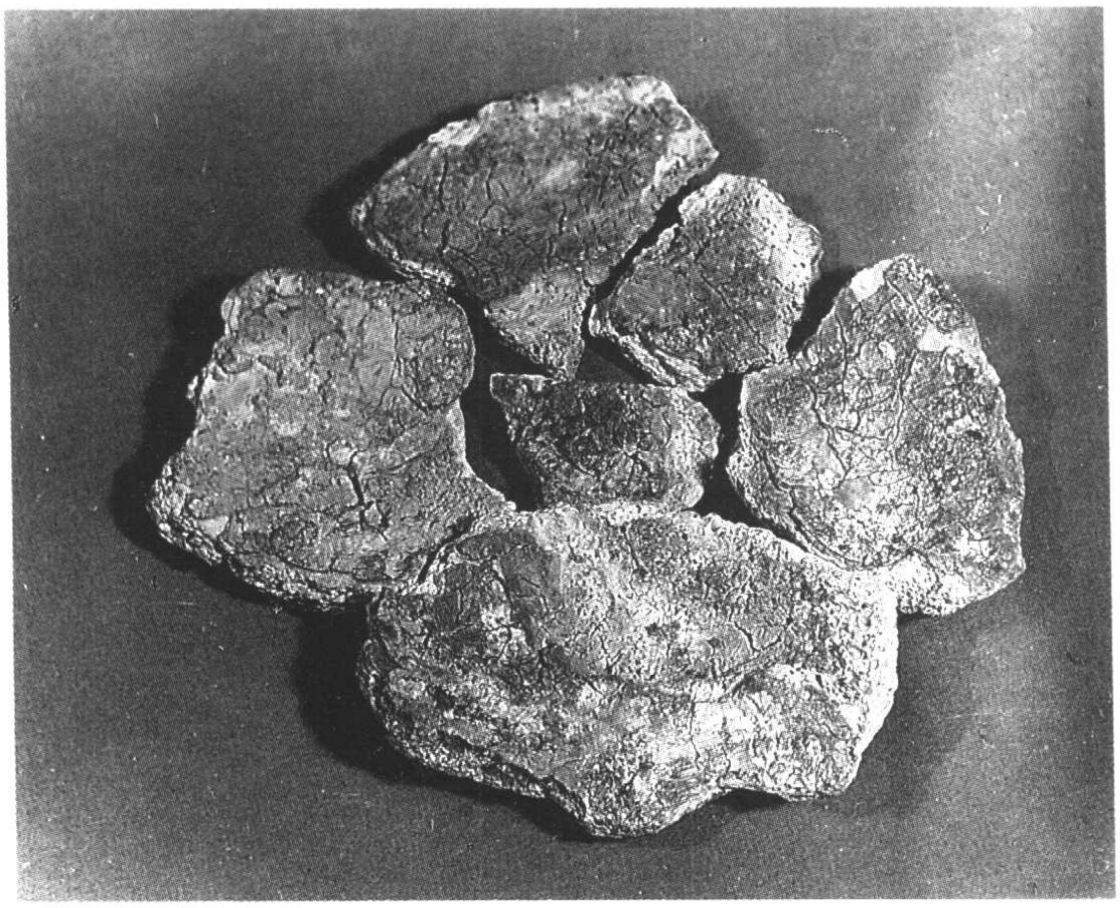
墓主颅骨残片及下颌左侧臼齿透视

1.1号残片(外面，约⅔)　2.2号残片(外面，约⅔)　3.2号残片(内面，约⅔)　4.4号残片(外面，约⅔)　5.3号残片(外面，约⅔)　6.下左臼齿透视(由外向内，原大)　7.下左臼齿透视(由内向外，原大)

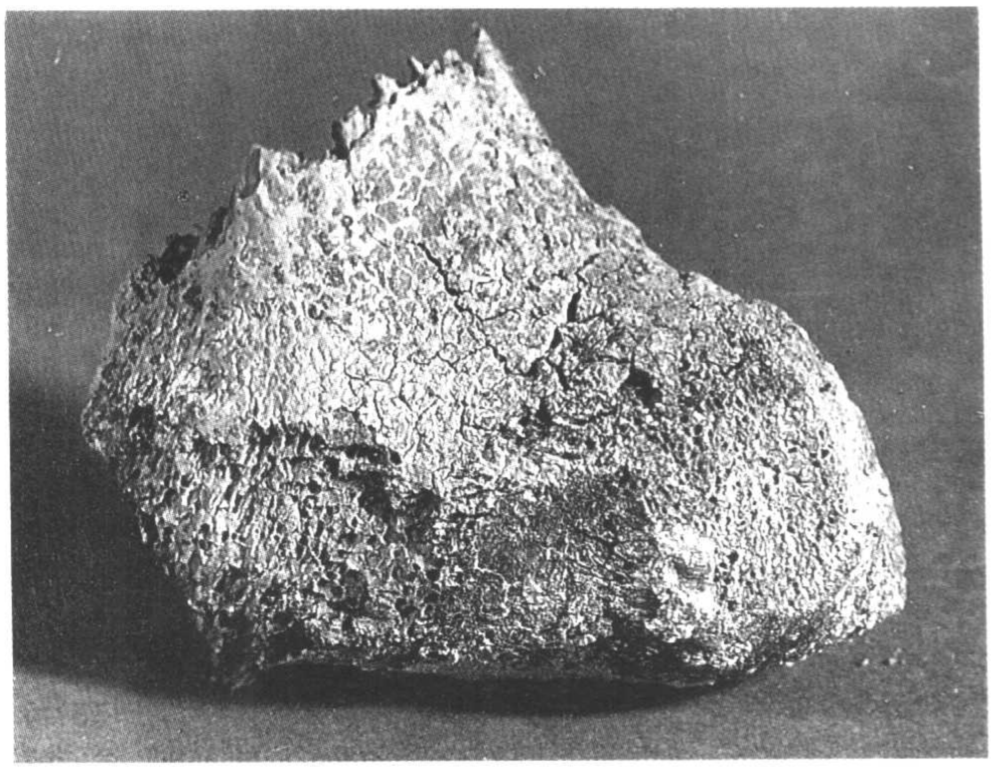


墓主下颌骨左侧残段(原大)

1. 外侧面　2. 牙齿𬌗合　3. 内侧面



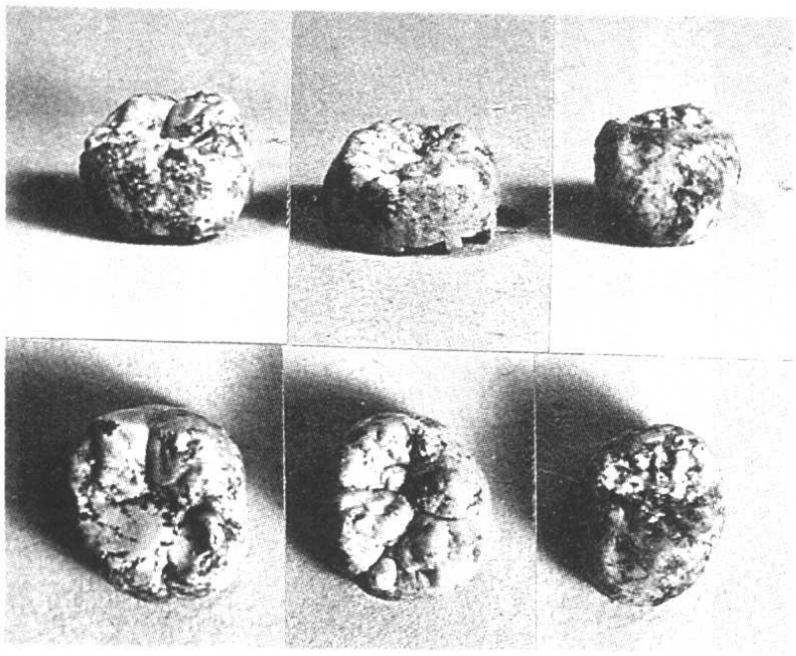
1. RXⅢ枕骨残片



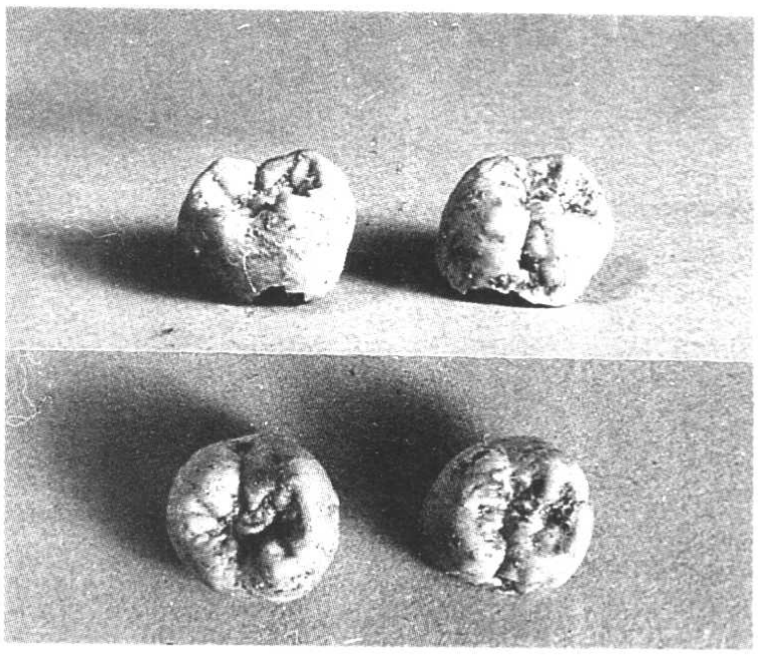
2. RXⅢ肱骨下端

3. RⅡ臼齿（左上一、左上二、左上三）

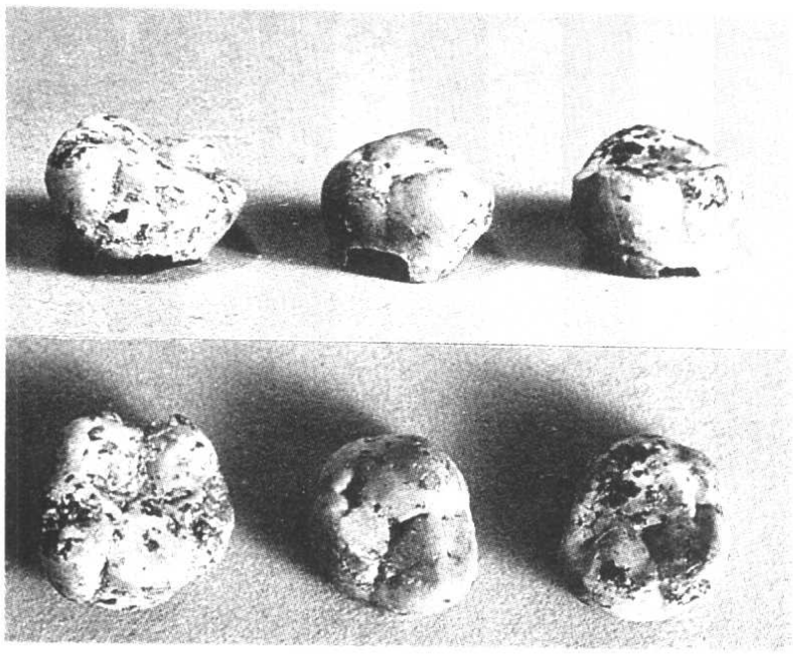
殉人遗骸鉴定



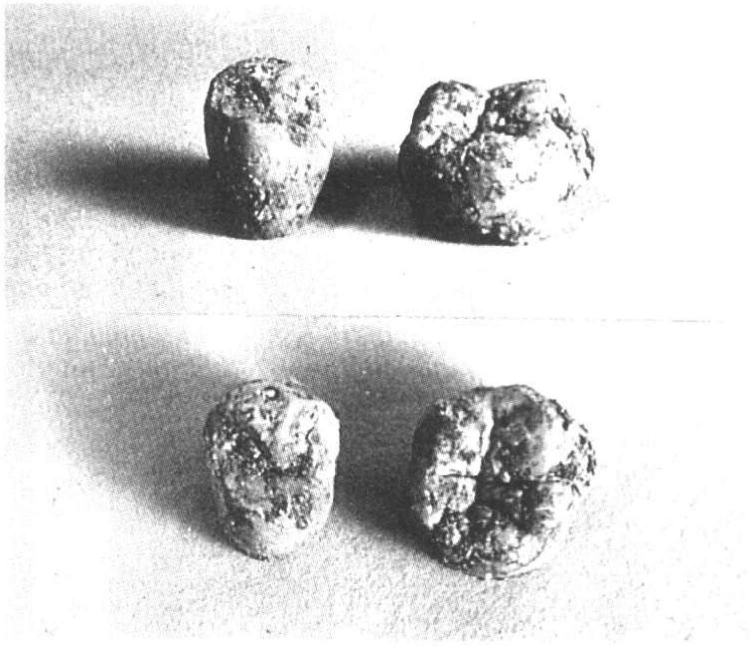
1. RV臼齿(左上二、右下三、?)



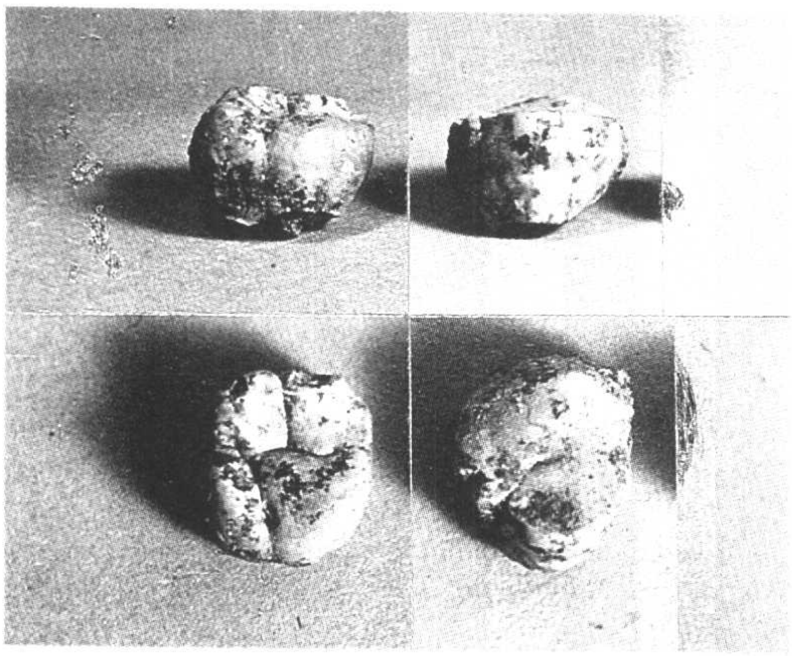
2. RVⅠ臼齿



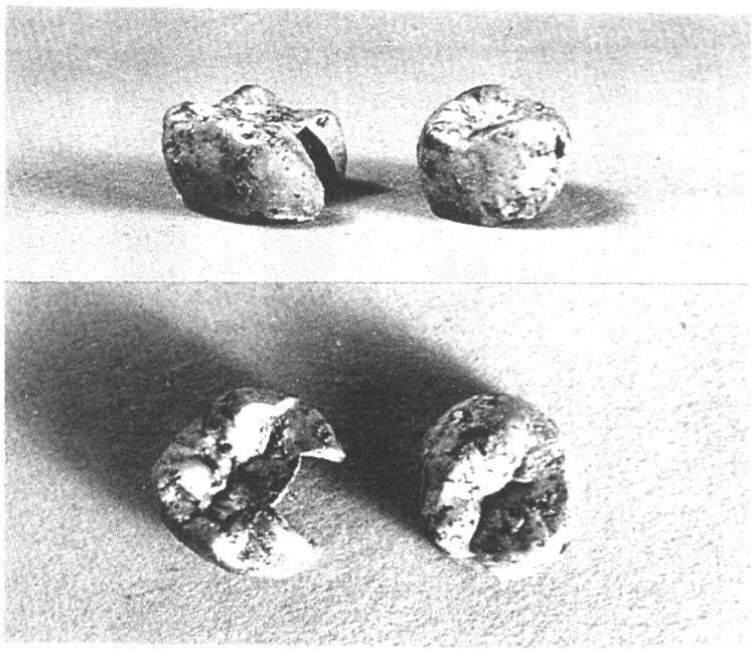
3. RVⅡ臼齿(左下一、左上二、右上二)



4. RVⅢ臼齿(左上前、右下一)

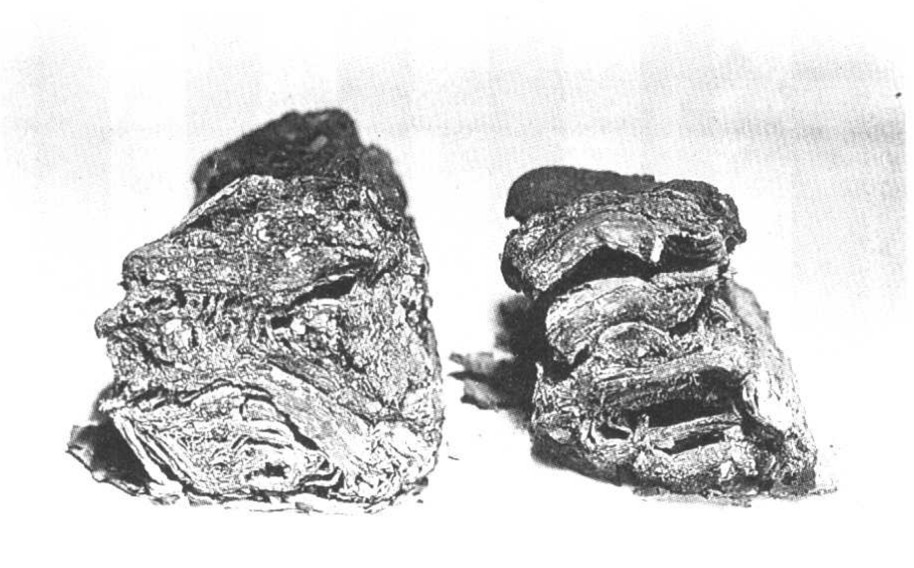


5. RIX臼齿(右上二、左上一)

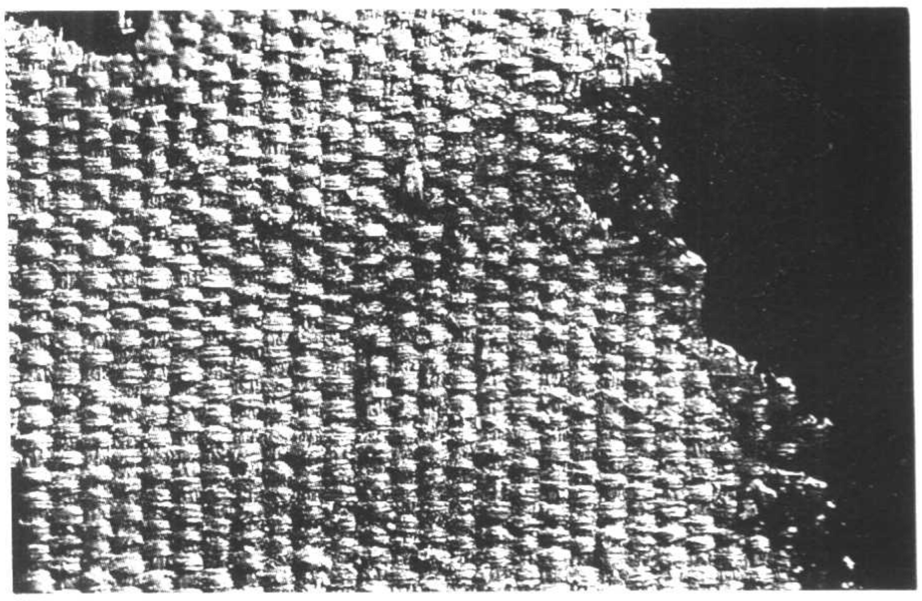


6. RIX臼齿(左下一、?)

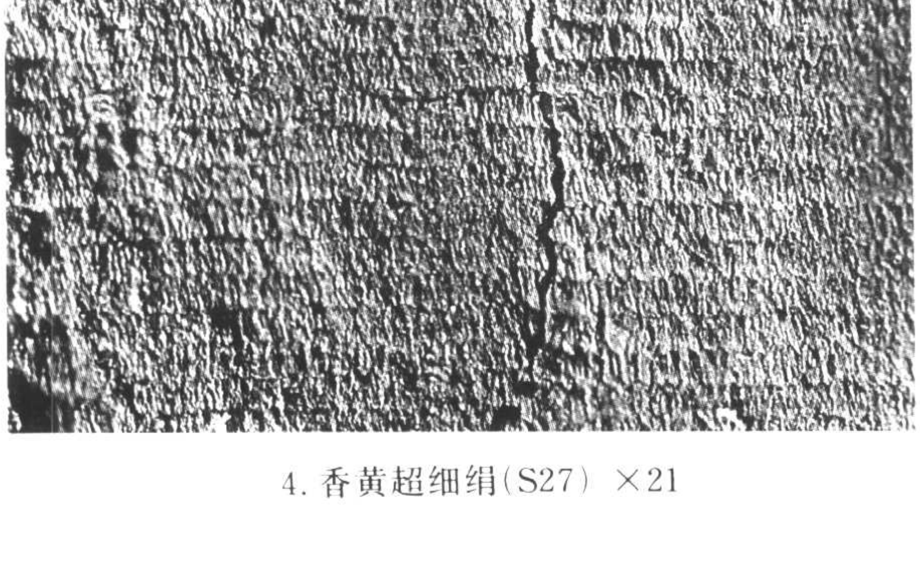
1. 西耳室织物出土情形



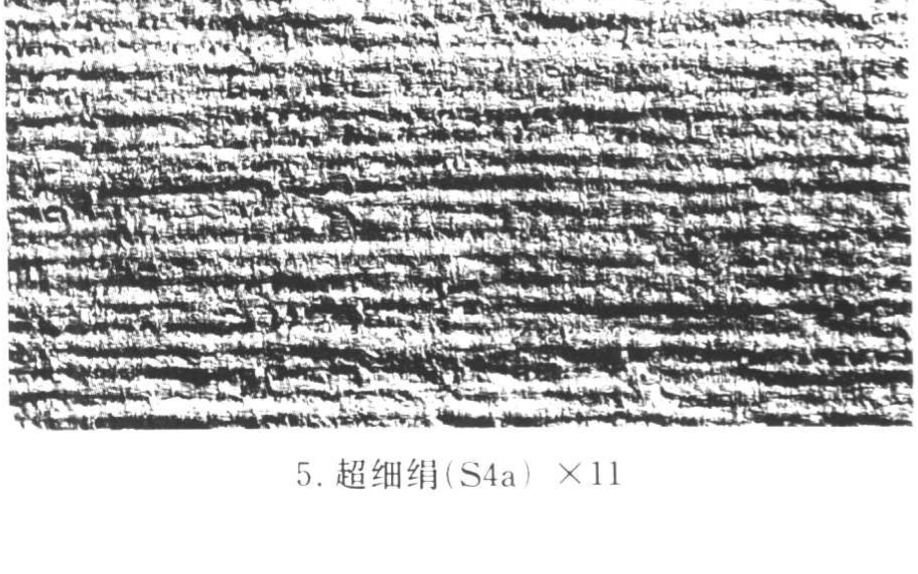
2. 原匹与层叠堆放的织物



3. 粗绢(S44) ×11

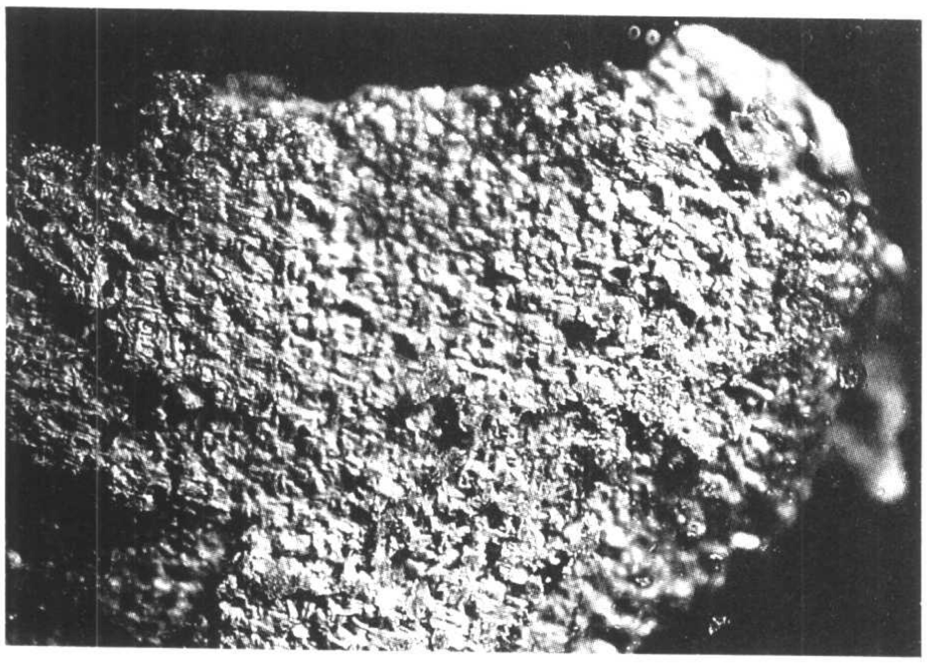


4. 香黄超细绢(S27) ×21



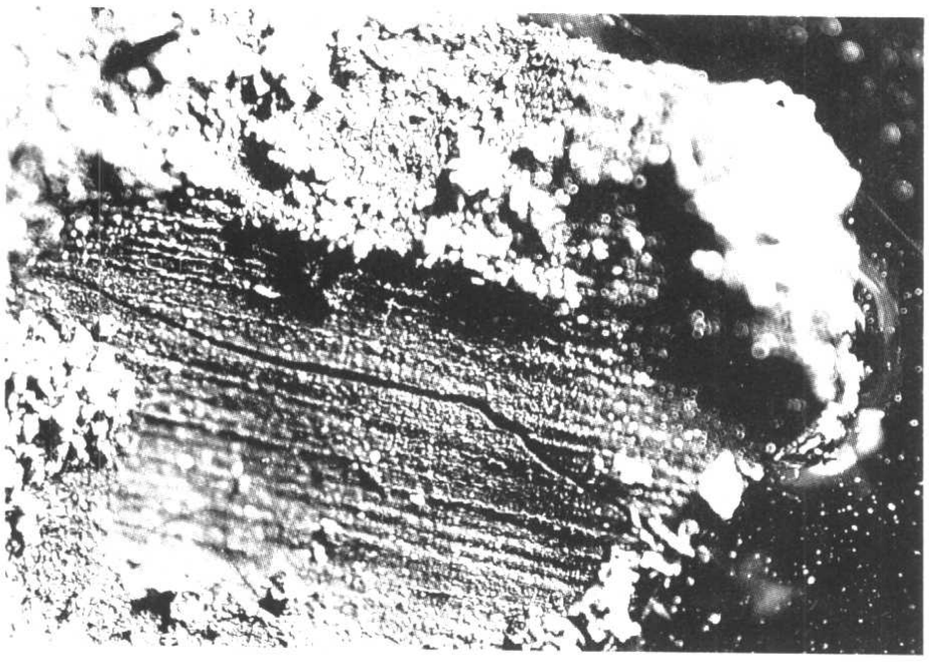
5. 超细绢(S4a) ×11

纺织品鉴定



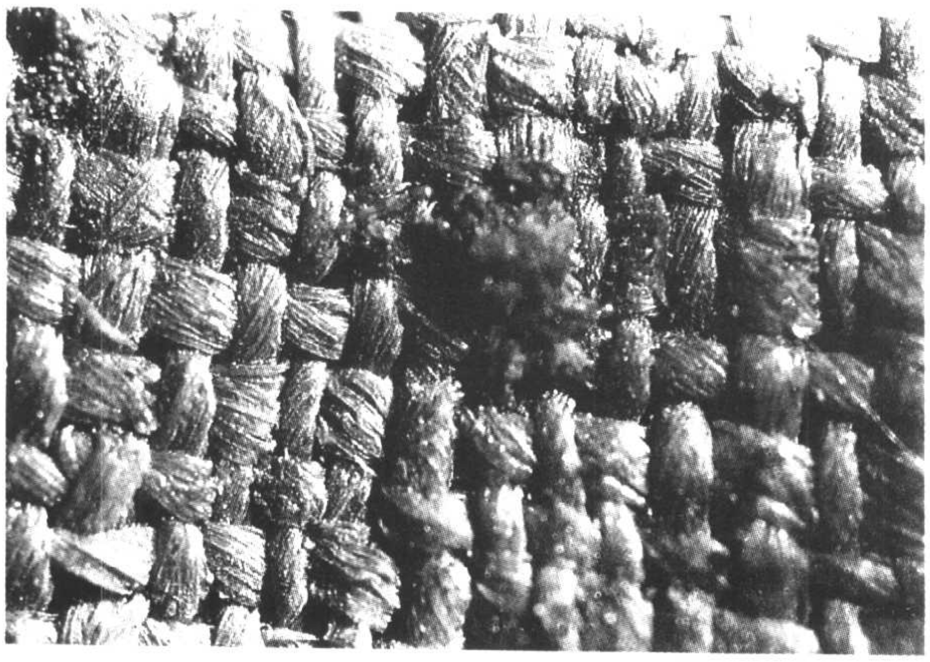
1. 云母研光绢(S31) ×11

2. 云母研光绢(S33) ×11

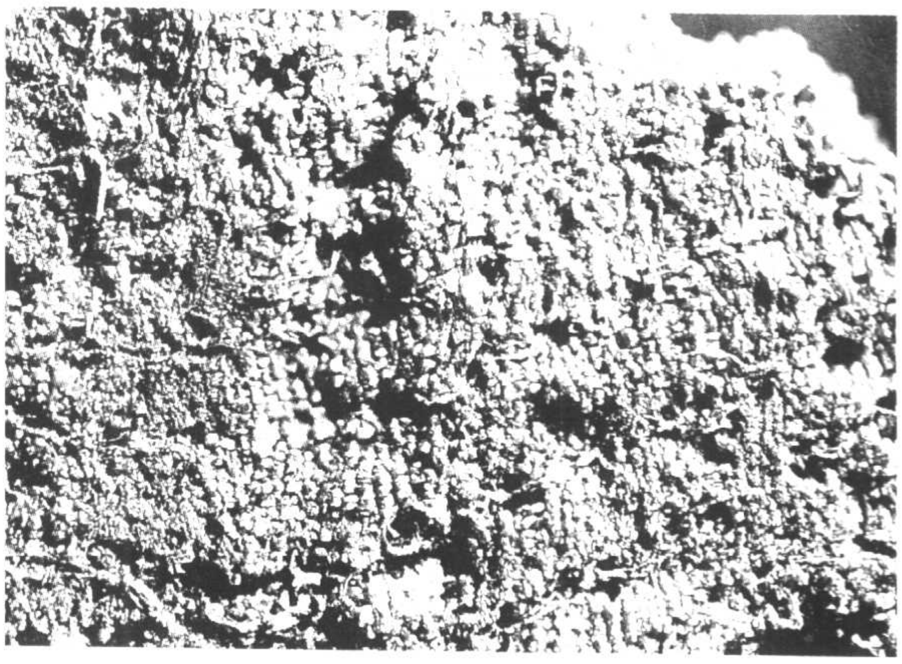


3. 黑油绢(S25) ×11

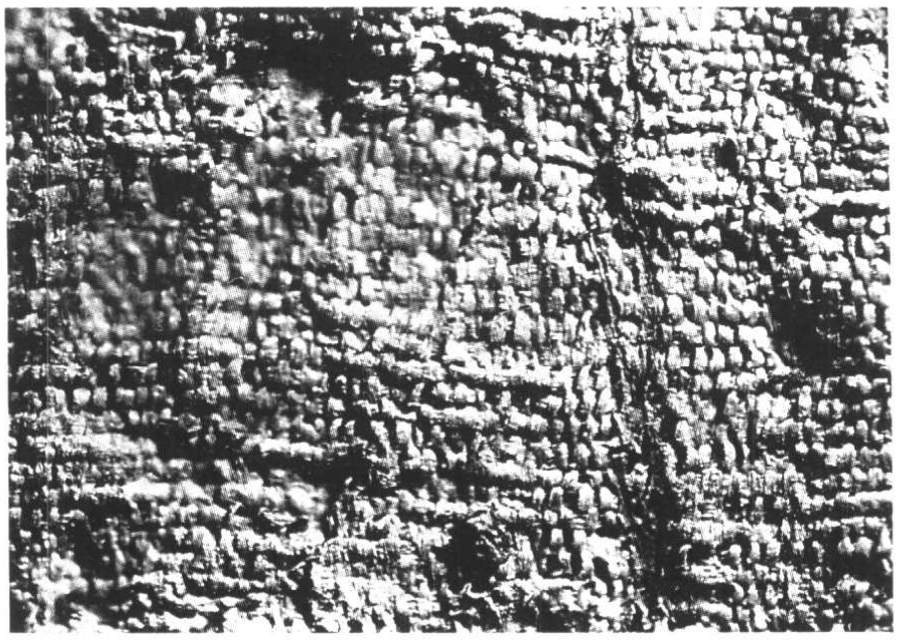
4. 朱绢(S16B) ×11



5. 紬(S43) ×11

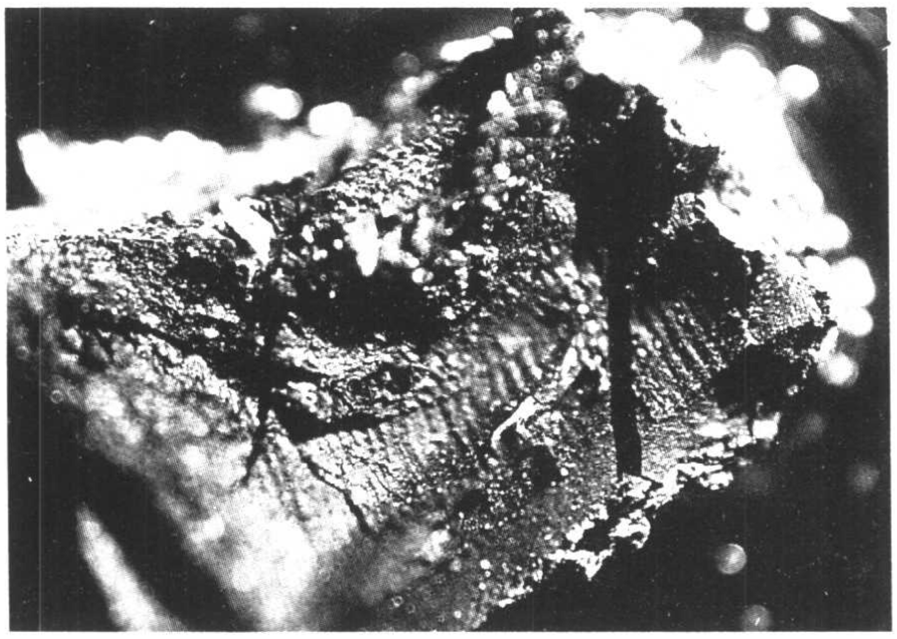


6. 绣绢(S19) ×11

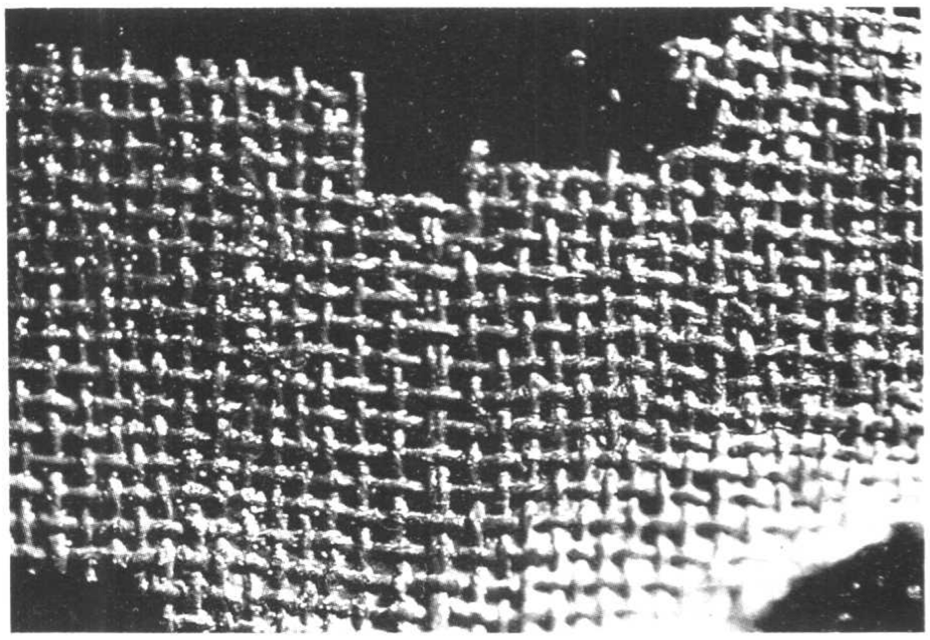


1.绣绢(S29) ×11

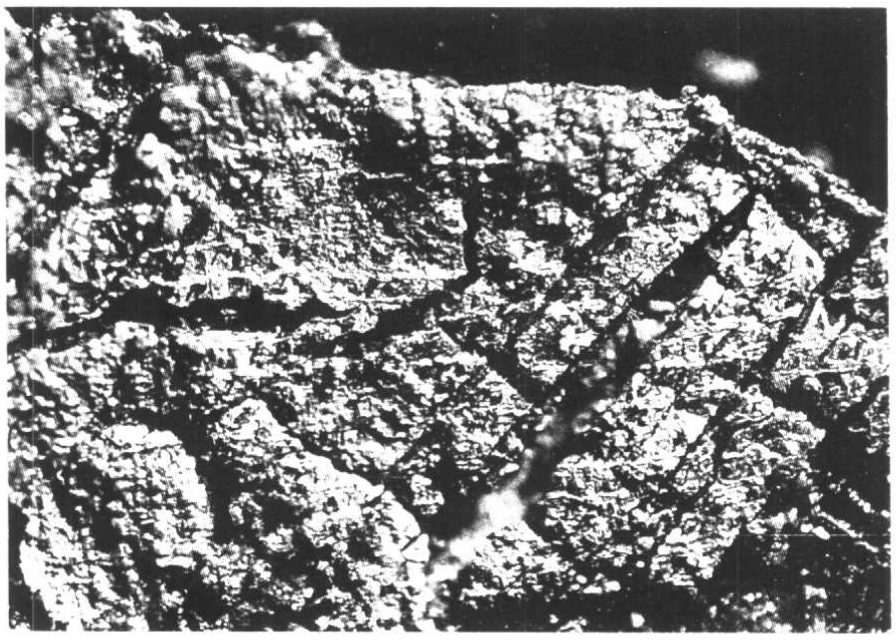
2.绣绢图案(S29、C158－Ⅰ)



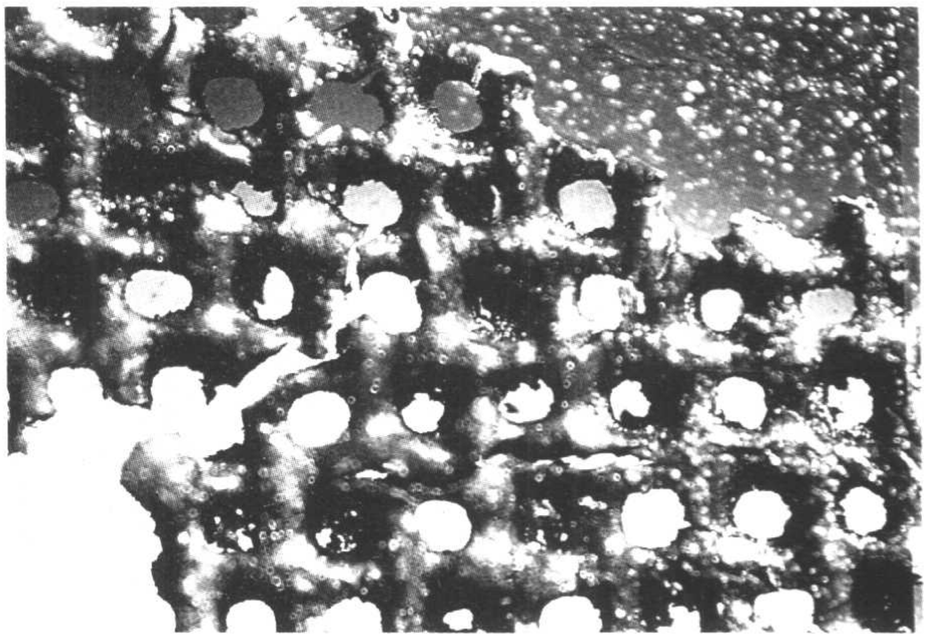
3.绣绢(S32)



4.方目“纱”(S35)



5.“朱纱”(S12)

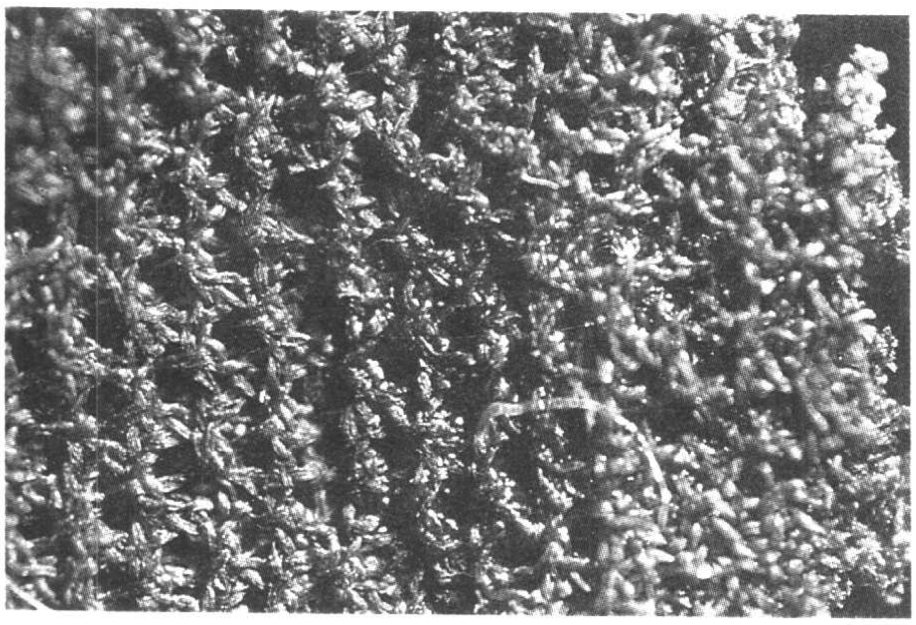


6.細纱(S36)

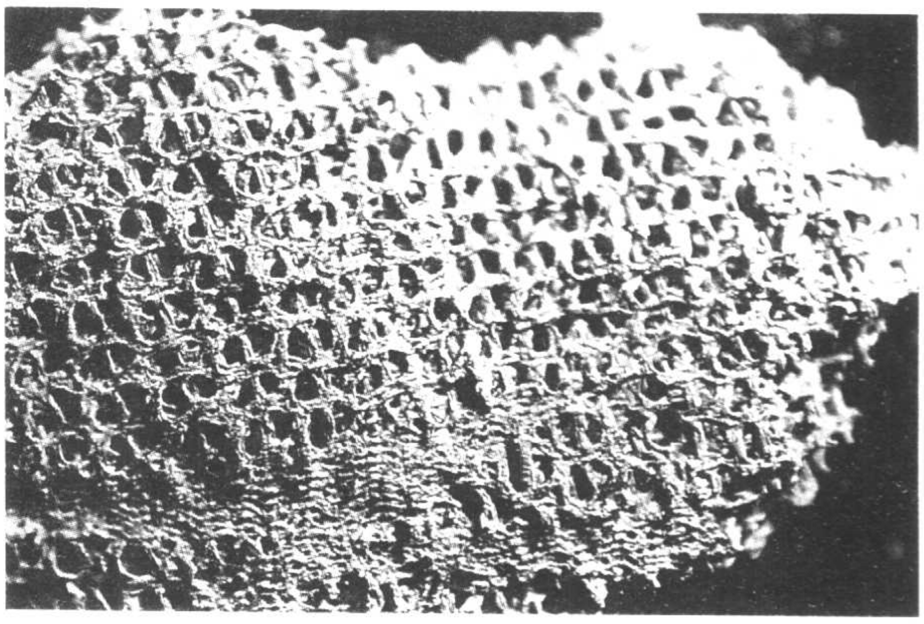
1.绣"纱"残片(S54)

2.平纹织物(S24) ×11

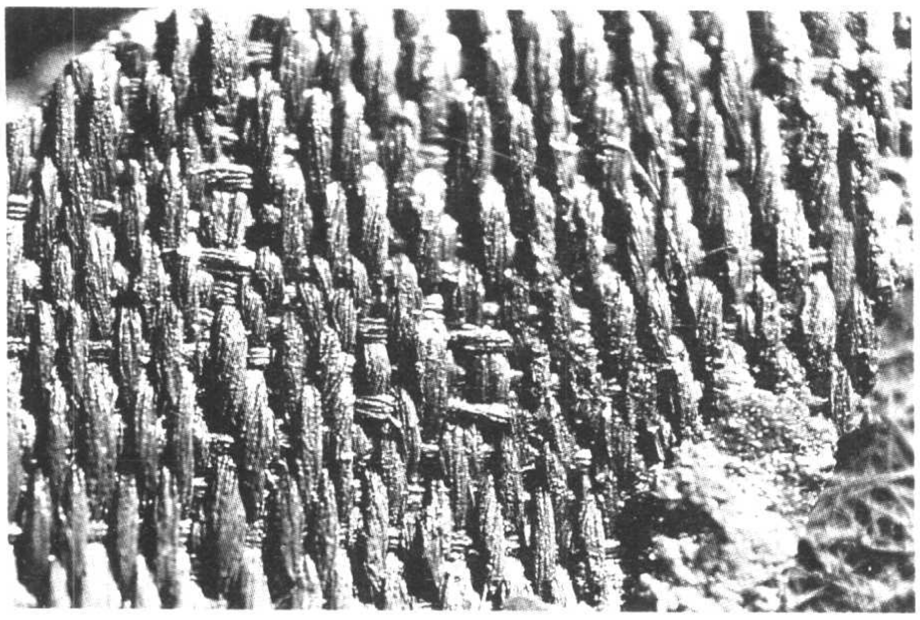
3.绉纱(S21) ×11



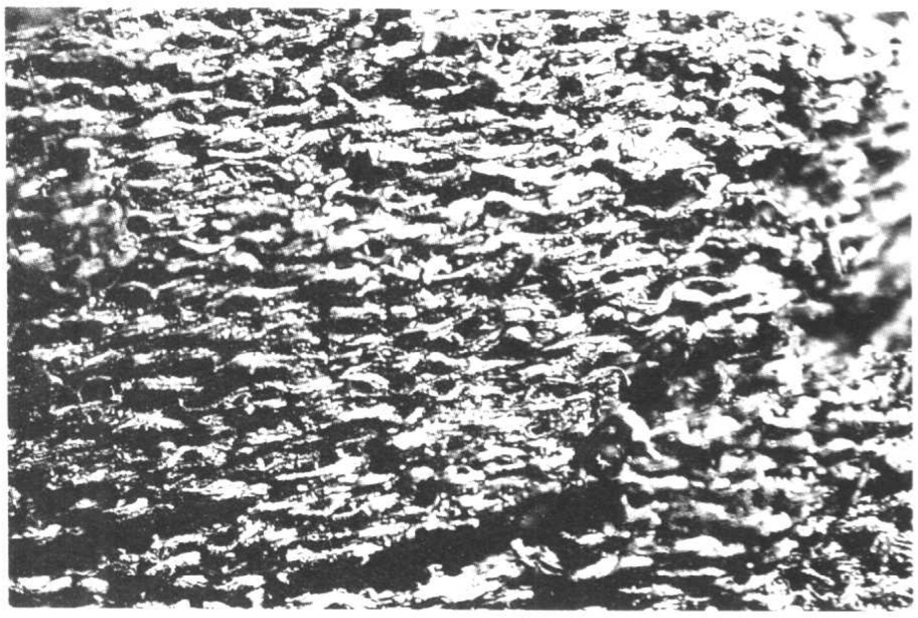
4.菱纹罗(S41A)



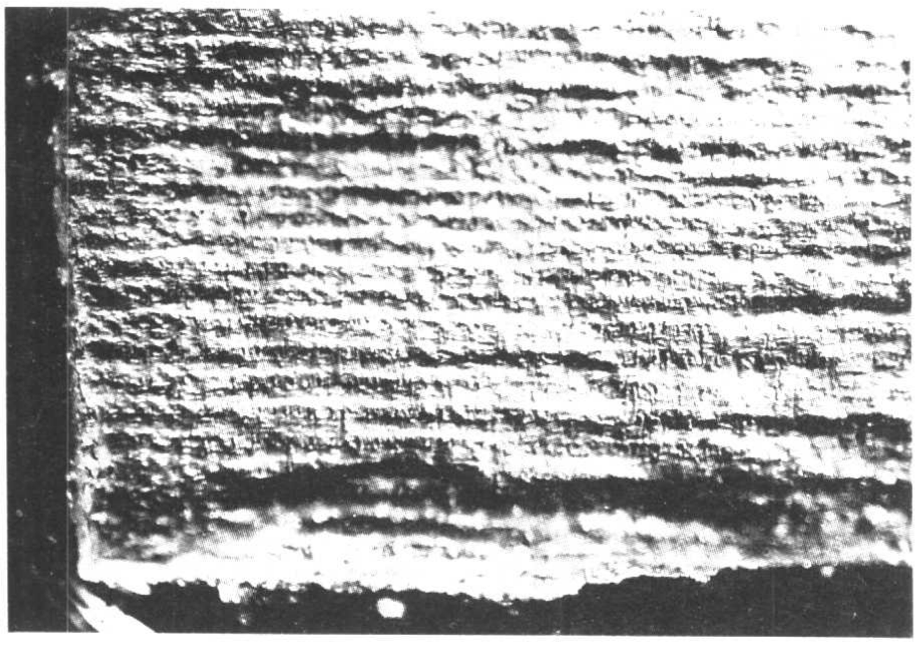
5.朱染菱纹罗(S34) ×11



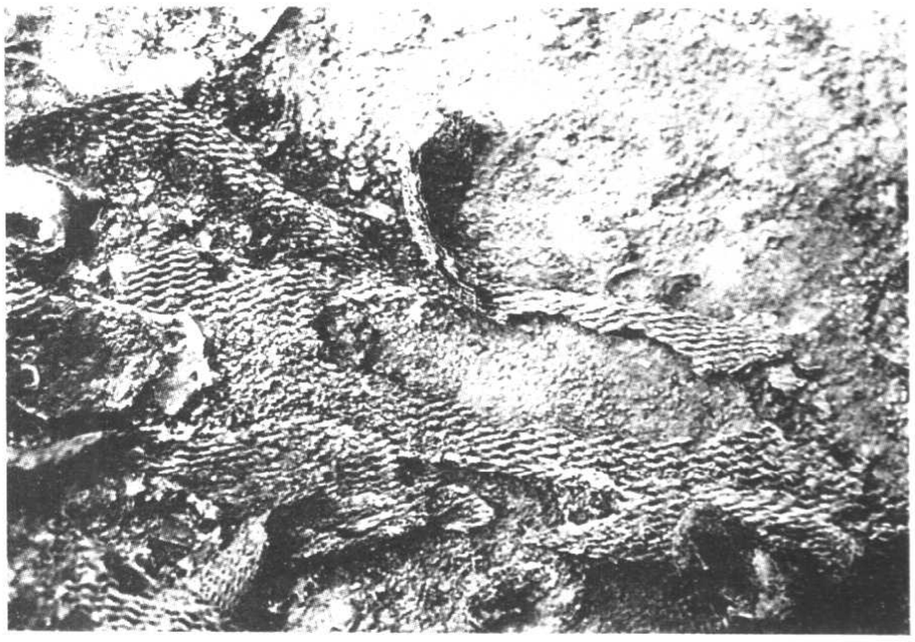
1. 锦(S38A) ×11



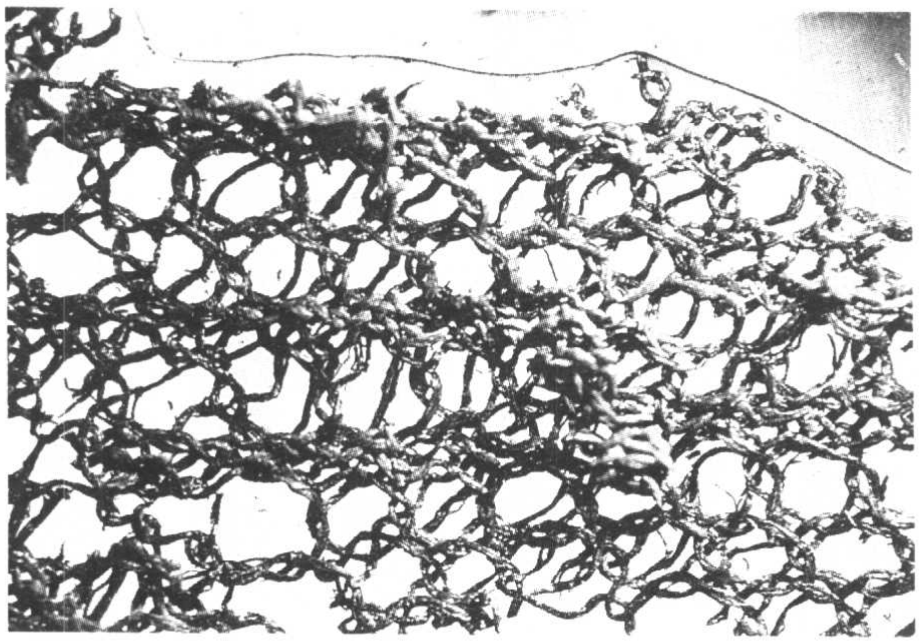
2. 朱黑二色锦(S28) ×11



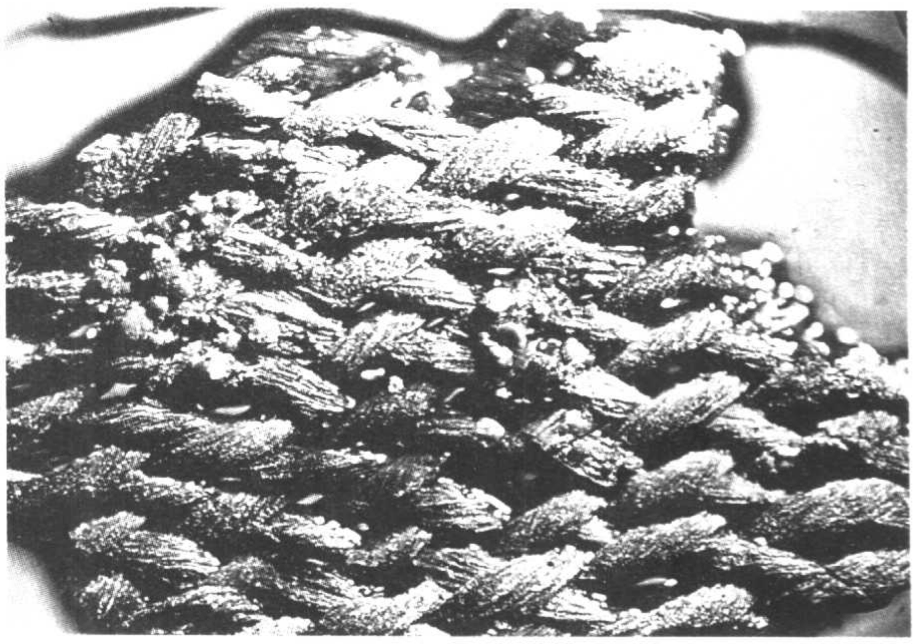
3. 朱棕二色锦(S6) ×11



4. 绒圈锦(S52)



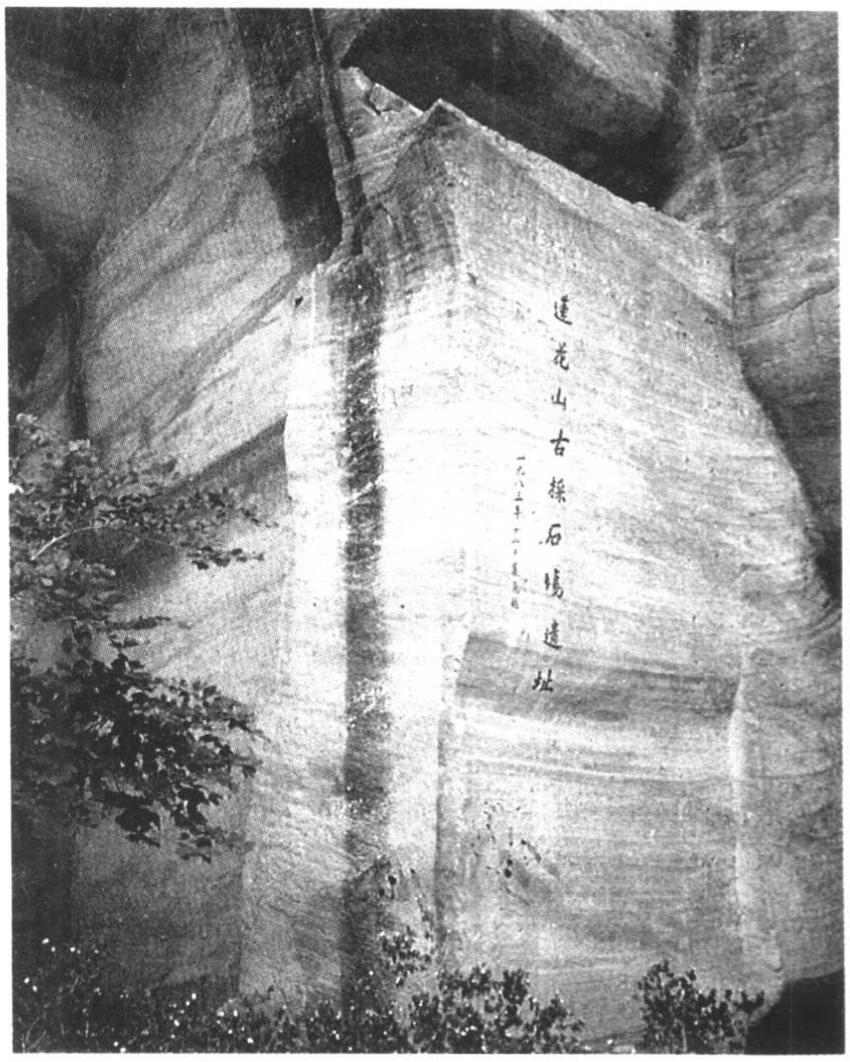
5. 组(S41B) ×11



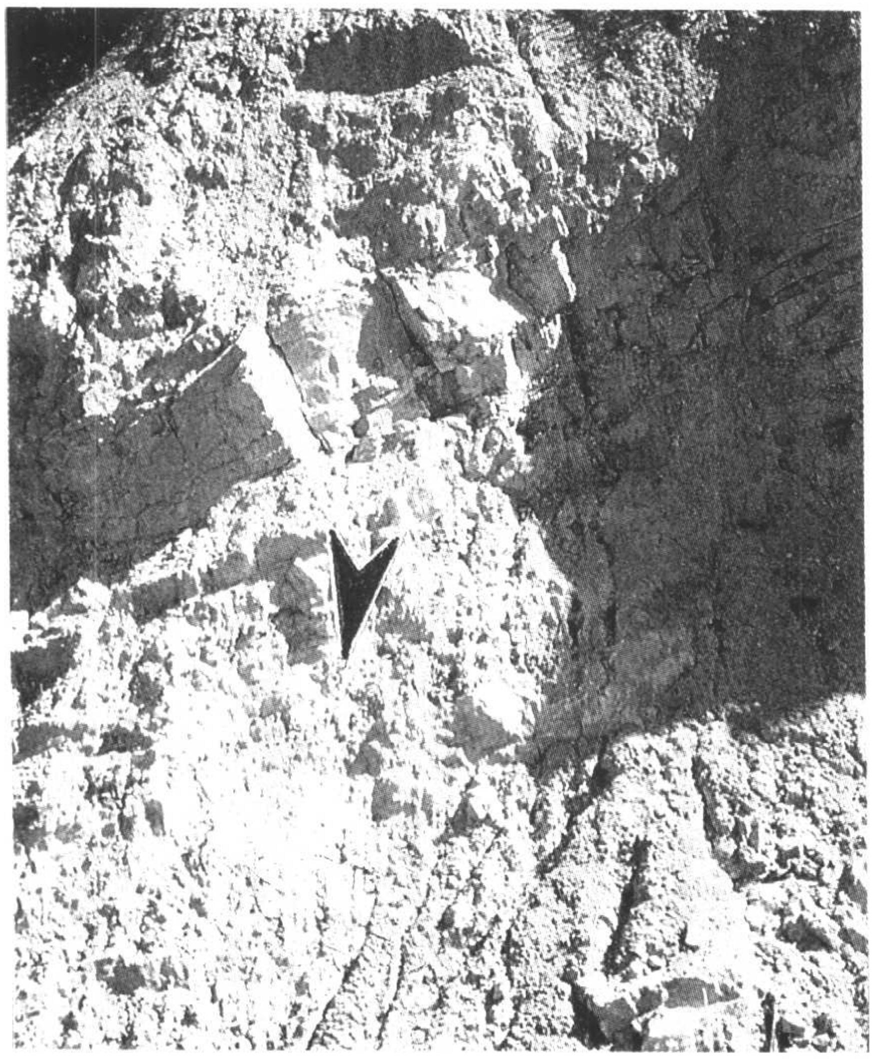
6. 组(S42) ×11

图版二四三(CCⅩLⅢ)

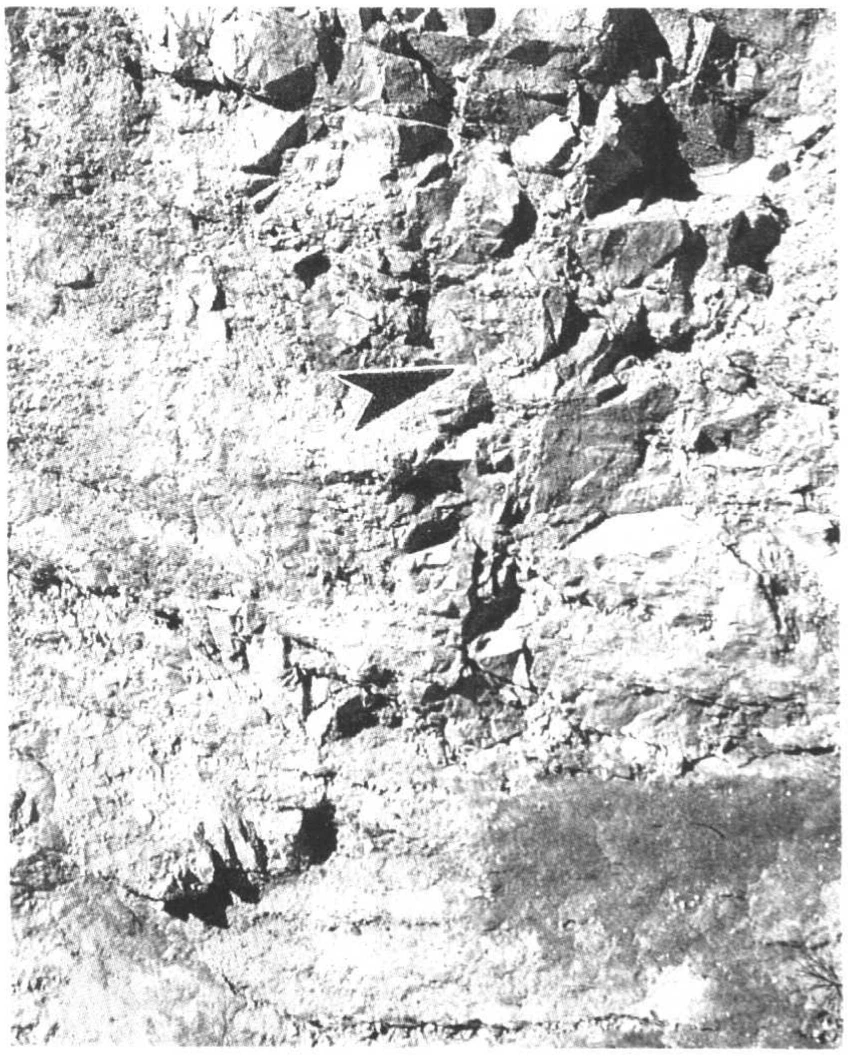
1. 莲花山古采石场(前为狮子洋)



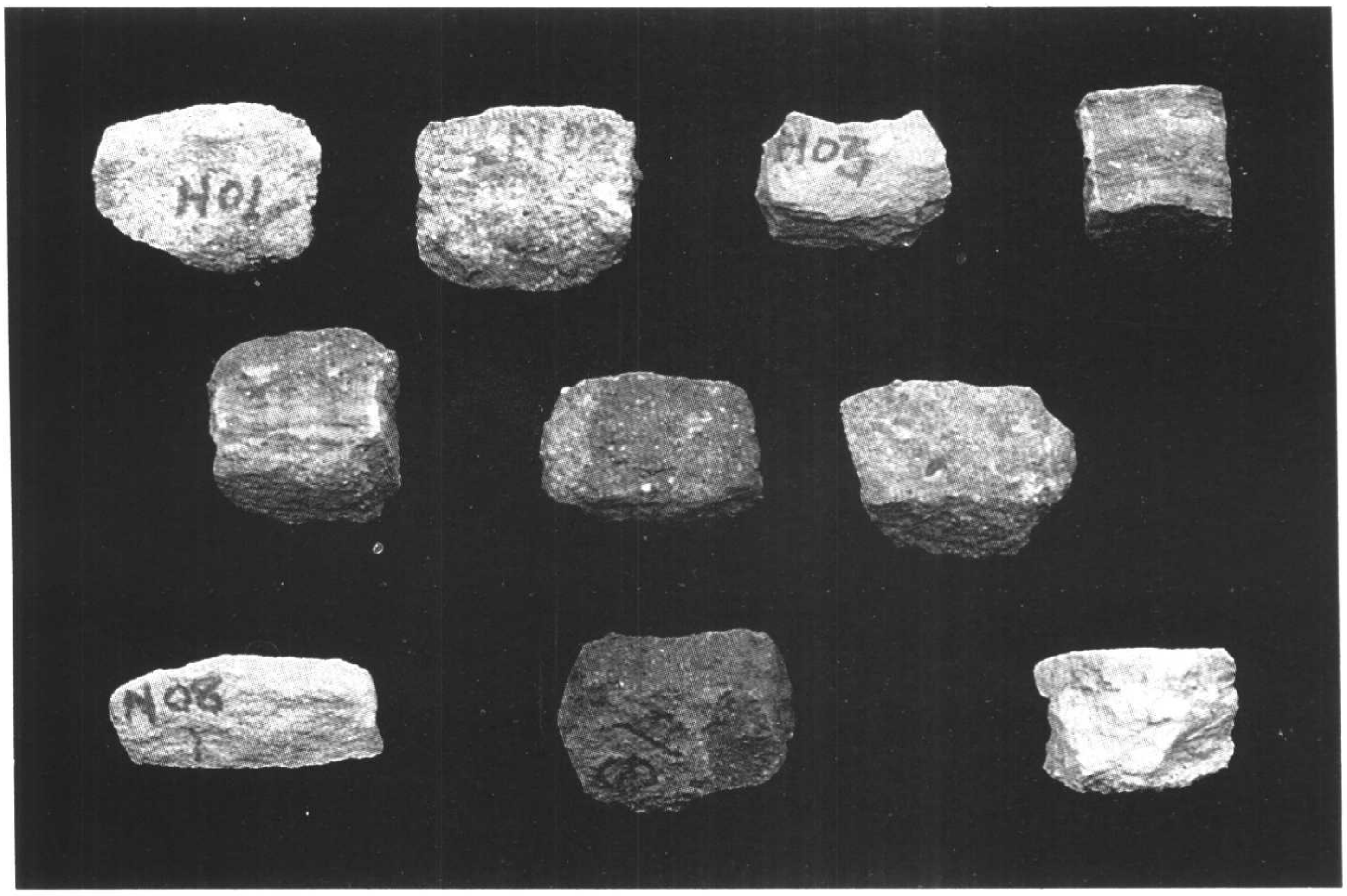
2. 石场采石面



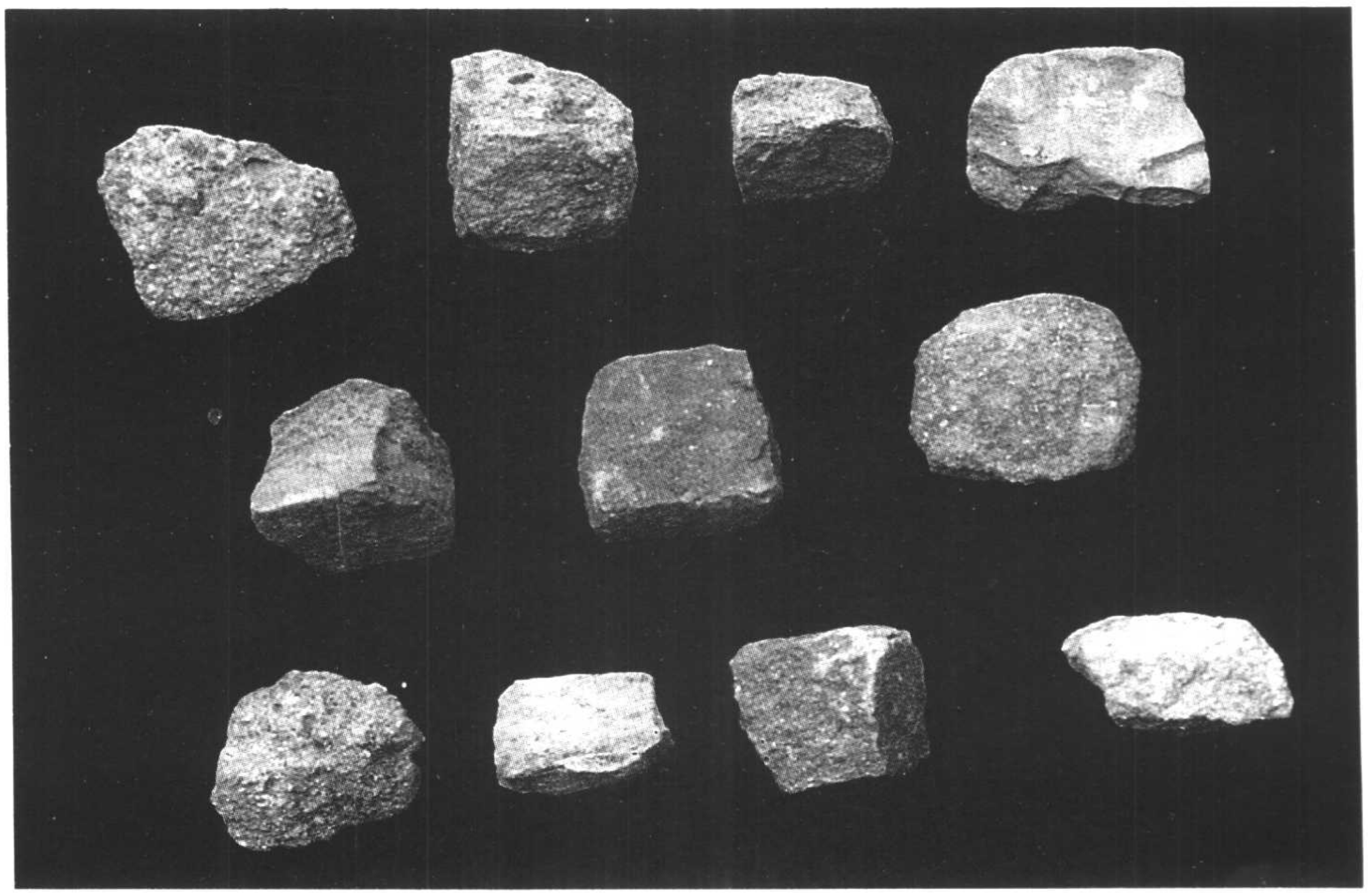
3. 北郊飞鹅岭的次花岗斑岩



4. 次花岗斑岩浸入珠罗纪砂页岩



1. 墓室石料标本

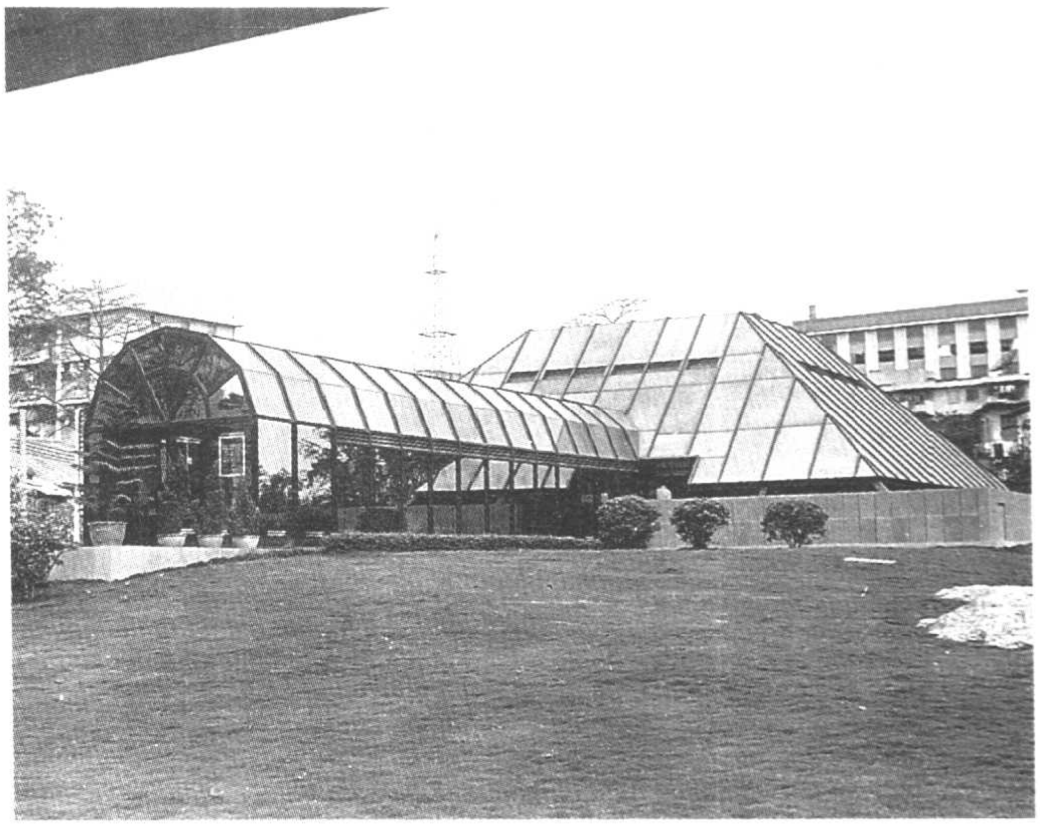


2. 莲花山岩石标本

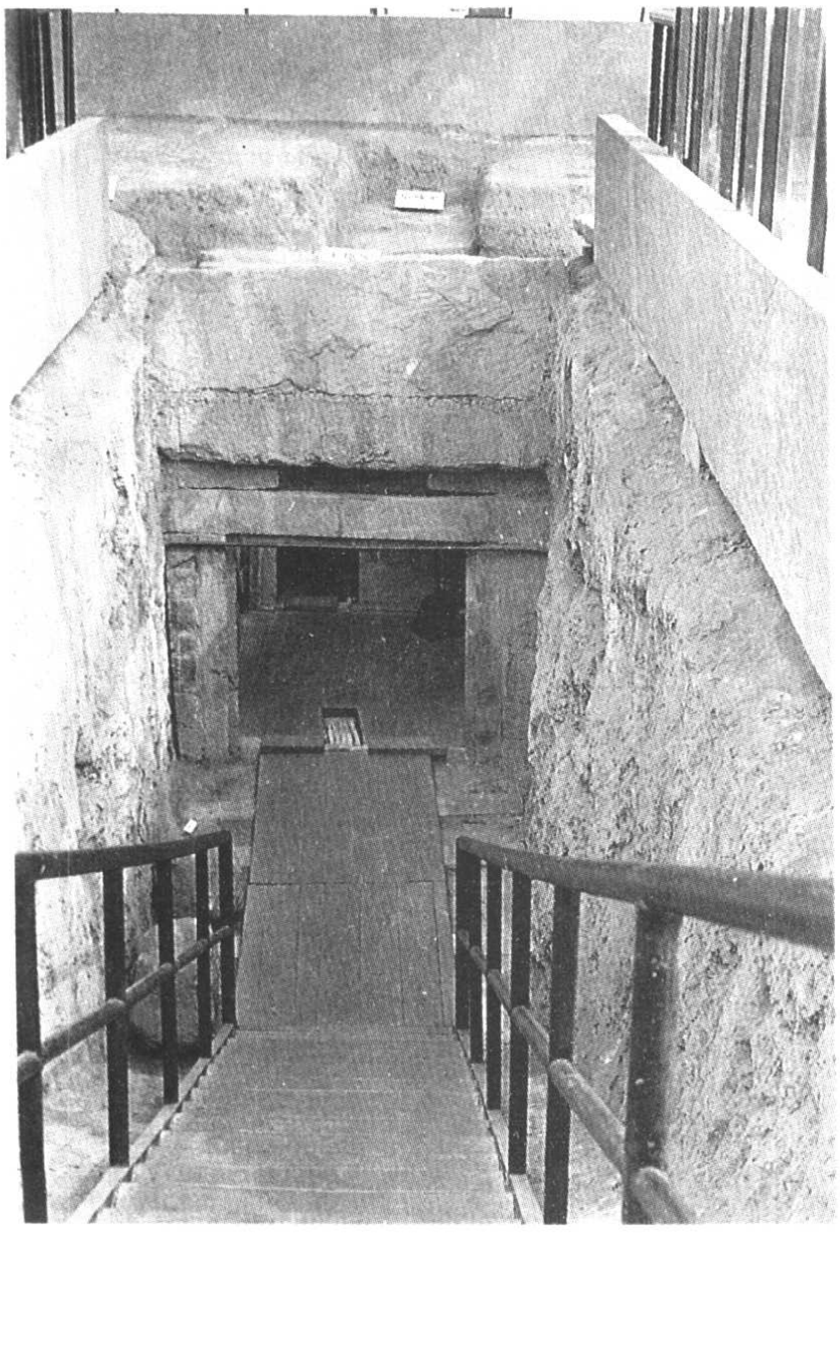
墓室石料及原产地鉴定

发掘结束后全体工作人员合影

1. 在象岗东麓的"西汉南越王墓博物馆"(1988年建成)



2. 墓室维修后加盖的防护大棚



3. 维修后的墓室

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书名＝下册
作者＝
页数＝２７９
ＳＳ号＝０
出版日期＝

封面
书名
目录
正文